

# BOSCH INJ. PUMP TEST SPECIFICATIONS

## Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 24.05.95  
Test oil : ISO 4113

Combination No. : 0 402 946 302

Injection pump  
Pump designation : PES6P120A720LS8514  
EP type number : 0 412 926 210

Governor  
Governor design. : RQV250...95QPA1209K  
Governor no. : 0 421 815 972

Cust. part No. : 1369074

Customer-spec. information  
Customer : SCANIA  
Motor : DSC1206

## TEST BENCH REQUIREMENTS

Inlet line : EHAB

Test oil inlet  
temp. °C : 40  
Tolerance °C : ± 2.0

Overflow valve : 2 417 413 082

Inlet press. bar : 2.5

Test nozzle holde  
assembly : 1 688 901 104

Opening pressure  
bar : 251.5  
Tolerance bar : ± 1.5

Test lines : 1 680 750 008

Outside diameter : 6.0

x inside diameter : 2.0

x length mm : 600

## REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

## BEGINNING OF DELIVERY

Test pressure bar : 26.0  
Tolerance bar : ± 1.0

Prestroke mm : 4.00  
Tolerance mm : ± 0.05

test only : ± 0.10

Rack travel in mm : 10.50  
Tolerance mm : ± 1.50

Firing order : 1- 5- 3- 6- 2-  
: 4

Phasing : 0-60-120-180-240  
: -300  
Tolerance : ± 0.30  
Check  
tolerance °NW : ± 0.50

Start of delivery blocking

Barrel no. : 6

## BASIC SETTING

Rated speed rpm : 825

Rack travel in mm : 13.45  
Tolerance mm : ± 0.05

Del. quantity  
cm<sup>3</sup>/1000 strokes : 375.0

Tolerance  
cm<sup>3</sup>/1000 strokes : ± 1.0

Check tolerance  
cm<sup>3</sup>/1000S. : ± 4.0

Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0

Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

Rated speed rpm : 250

Rack travel in mm : 4.60  
Tolerance mm : ± 0.30

Del. quantity  
cm<sup>3</sup>/1000 strokes : 22.0

Tolerance  
cm<sup>3</sup>/1000 strokes : ± 3.0

Check tolerance  
cm<sup>3</sup>/1000S. : ± 6.0

Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 4.0

Check tolerance  
cm<sup>3</sup>/1000S. : 8.0

#### (B) SETTING OF INJECTION PUMP WITH GOVERNOR

##### GUIDE SLEEVE TRAVEL

Rated speed rpm : 250  
guide sleeve  
travel mm : 1.67  
Tolerance mm : ± 0.25

Rated speed rpm : 1017  
guide sleeve  
travel mm : 9.08  
Tolerance mm : ± 0.25

Rated speed rpm : 661  
guide sleeve  
travel mm : 5.50  
Tolerance mm : ± 0.25

Rated speed rpm : 302  
guide sleeve  
travel mm : 2.44  
Tolerance mm : ± 0.25

Rated speed rpm : 352  
guide sleeve  
travel mm : 3.14  
Tolerance mm : ± 0.25

Rated speed rpm : 390  
guide sleeve  
travel mm : 3.50  
Tolerance mm : ± 0.25

Rated speed rpm : 1310  
guide sleeve  
travel mm : 13.50  
Tolerance mm : ± 0.50

##### GUIDE SLEEVE POSITION

Rated speed rpm : 1154

Rack travel in mm : 12.45  
Tolerance mm : ± 1.30

##### FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 825  
Aneroid pressure  
hPa : 1500

Del. quantity  
cm<sup>3</sup>/1000 strokes : 375.0

Tolerance  
cm<sup>3</sup>/1000 strokes : ± 1.0

Check tolerance  
cm<sup>3</sup>/1000S. : ± 4.0

Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0

Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

##### RATED SPEED

control lever  
position degree : 61.0  
tolerance degree : ± 4.0

control lever  
position degree : 115.0  
tolerance degree : ± 4.0

rack travel mm : 11.70  
Rated speed rpm : 995  
Tolerance 1/min : ± 5

rack travel mm : 4.00  
Rated speed rpm : 1110  
Tolerance 1/min : ± 15

rack travel mm : 0.50  
Tolerance mm : ± 0.50  
Rated speed rpm : 1200

##### LOW IDLE

control lever  
position degree : 72.0  
tolerance degree :  $\pm$  4.0

control lever  
position degree : 18.0  
tolerance degree :  $\pm$  4.0

#### Testing:

Rated speed rpm : 250  
rack travel mm : 4.60  
Tolerance mm :  $\pm$  0.30

Rated speed rpm : 150  
CRT mm min. :  $>$  5.65

Rated speed rpm : 275

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#### TORQUE CONTROL

Rated speed rpm : 825  
rack travel mm : 13.45  
Tolerance mm :  $\pm$  0.05

Rated speed rpm : 650  
rack travel mm : 12.55  
Tolerance mm :  $\pm$  0.10

Rated speed rpm : 950  
rack travel mm : 12.75  
Tolerance mm :  $\pm$  0.10

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#### ANEROID/ALTITUDE COMPENSATOR TEST

#### SETTING

Rated speed rpm : 825  
Pressure hPa : 1500  
rack travel mm : 13.45  
Tolerance mm :  $\pm$  0.10

#### MEASUREMENT

Pressure hPa : -  
Rated speed rpm : 825  
rack travel mm : 7.30  
Tolerance mm :  $\pm$  0.20

Rated speed rpm : 825

Pressure hPa : 435  
rack travel mm : 8.90  
Tolerance mm :  $\pm$  0.15

Pressure hPa : 700  
rack travel mm : 10.10  
Tolerance mm :  $\pm$  0.05

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#### START CUT-OUT

Rated speed rpm :  $<$  170  
Check  
speed 1/min :  $<$  190

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#### FUEL DELIVERY CHARACTERISTICS

Aneroid pressure  
hPa : 1500  
Rated speed rpm : 650  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 378.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  4.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  6.0

Aneroid pressure  
hPa : 1500  
Rated speed rpm : 950  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 331.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  4.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  6.0

Aneroid pressure  
hPa : -  
Rated speed rpm : 950  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 15.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  15.0

Aneroid pressure  
hPa : -  
Rated speed rpm : 500  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 197.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  1.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  4.0

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#### BREAKAWAY

Rack travel in mm : 11.70  
Rated speed rpm : 995  
Tolerance 1/min :  $\pm$  5

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STARTING FUEL DELIVERY

Rated speed rpm : 100  
rack travel mm : 10.20  
Tolerance mm :  $\pm$  0.50

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LOW IDLE

Rated speed rpm : 250  
rack travel mm : 4.60  
Tolerance mm :  $\pm$  0.30  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 22.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  3.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  6.0  
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 4.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 8.0

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End of test specification sheet



# BOSCH INJ. PUMP TEST SPECIFICATIONS

## Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 16.03.94  
Test oil : ISO 4113

Combination No. : 0 403 444 145

Injection pump  
Pump designation : PES4MW100/320RS1199  
EP type number : 0 413 404 112

Governor  
Governor design. : RQV300...1100MW131K  
Governor no. : 0 420 083 987

Cust. part No. :

Customer-spec. information  
Customer : PERKINS  
Motor : VME  
Power KW : 74.0

## TEST BENCH REQUIREMENTS

Inlet line : 3.1

Test oil inlet  
temp. °C : 40  
Tolerance °C : ± 2.0

Overflow valve : 1 419 992 198

Inlet press. bar : 1.5

Overflow quantity  
min. l/h : 100

Test nozzle holde  
assembly : 1 688 901 101

Opening pressure  
bar : 208.5  
Tolerance bar : ± 1.5

Test lines : 1 680 750 008

Outside diameter : 6.0

x inside diameter : 2.0  
x length mm : 600

## REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

## BEGINNING OF DELIVERY

Test pressure bar : 31.0  
Tolerance bar : ± 1.0

Prestroke mm : 3.35  
Tolerance mm : ± 0.05

test only : ± 0.10

Rack travel in mm : 13.00  
Tolerance mm : ± 1.00

Firing order : 1- 3- 4- 2

Phasing : 0-90-180-270  
Tolerance : ± 0.50  
Check  
tolerance \*NW : ± 0.75

Start of delivery blocking

\*NW before FB : 48.50

Barrel no. : 1

## BASIC SETTING

Rated speed rpm : 1100

Rack travel in mm : 12.95  
Tolerance mm : ± 0.05

Del. quantity  
cm<sup>3</sup>/1000 strokes : 128.0

Tolerance  
cm<sup>3</sup>/1000 strokes : ± 1.0

Check tolerance  
cm<sup>3</sup>/1000S. : + 3.0

Spread  
Tolerance  
cm<sup>3</sup>/1000 strokes : 3.5

Check tolerance  
cm<sup>3</sup>/1000S. : 6.0

Del. quantity  
cm<sup>3</sup>/1000 strokes : 18.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : + 2.0  
Check tolerance  
cm<sup>3</sup>/1000S. : + 4.5  
Spread  
Tolerance  
cm<sup>3</sup>/1000 strokes : 3.5  
Check tolerance  
cm<sup>3</sup>/1000S. : 5.5

(B) SETTING OF INJECTION PUMP  
WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 300  
guide sleeve  
travel mm : 1.78  
Tolerance mm : + 0.25

Rated speed rpm : 1156  
guide sleeve  
travel mm : 10.48  
Tolerance mm : + 0.25

Rated speed rpm : 738  
guide sleeve  
travel mm : 5.47  
Tolerance mm : + 0.25

Rated speed rpm : 312  
guide sleeve  
travel mm : 1.92  
Tolerance mm : + 0.25

Rated speed rpm : 362  
guide sleeve  
travel mm : 2.52  
Tolerance mm : + 0.25

Rated speed rpm : 410  
guide sleeve  
travel mm : 3.05  
Tolerance mm : + 0.25

Rated speed rpm : 1340

guide sleeve  
travel mm : 13.50  
Tolerance mm : + 0.50

GUIDE SLEEVE POSITION

Rated speed rpm : 1170  
Rack travel in mm : 16.50  
Tolerance mm : + 1.30

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1100  
Aneroid pressure  
hPa : 900  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 128.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : + 1.0  
Check tolerance  
cm<sup>3</sup>/1000S. : + 3.0  
Spread  
Tolerance  
cm<sup>3</sup>/1000 strokes : 3.5  
Check tolerance  
cm<sup>3</sup>/1000S. : 6.0

RATED SPEED

control lever  
position degree : 117.0  
tolerance degree : + 4.0  
rack travel mm : 11.90  
Rated speed rpm : 1145  
Tolerance 1/min : + 5

rack travel mm : 4.00  
Rated speed rpm : 1225  
Tolerance 1/min : + 15

rack travel mm : 0.50  
Tolerance mm : + 0.50  
Rated speed rpm : 1300

LOW IDLE

control lever  
position degree : 70.0  
tolerance degree : + 4.0

Testing:

Rated speed rpm : 300  
rack travel mm : 6.20  
Tolerance mm :  $\pm$  0.10

Rated speed rpm : 200  
CRT mm min. :  $>$  7.50

Rated speed rpm : 415

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#### TORQUE CONTROL

Rated speed rpm : 1100  
rack travel mm : 12.95  
Tolerance mm :  $\pm$  0.05

Rated speed rpm : 800  
rack travel mm : 12.50  
Tolerance mm :  $\pm$  0.10

Rated speed rpm : 500  
rack travel mm : 11.30  
Tolerance mm :  $\pm$  0.10

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#### ANEROID/ALTITUDE COMPENSATOR TEST

#### SETTING

Rated speed rpm : 1100  
Pressure hPa : 900  
rack travel mm : 12.95  
Tolerance mm :  $\pm$  0.10

#### MEASUREMENT

Pressure hPa : -  
Rated speed rpm : 1100  
rack travel mm : 9.30  
Tolerance mm :  $\pm$  0.10

Rated speed rpm : 1100

Pressure hPa : 225  
rack travel mm : 11.15  
Tolerance mm :  $\pm$  0.15

Pressure hPa : 150  
rack travel mm : 9.75  
Tolerance mm :  $\pm$  0.05

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#### START CUT-OUT

Rated speed rpm :  $<$  230  
Check  
speed 1/min :  $<$  250

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#### FUEL DELIVERY CHARACTERISTICS

Aneroid pressure  
hPa : 900  
Rated speed rpm : 800  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 125.0  
Tolerance

cm<sup>3</sup>/1000 strokes :  $\pm$  1.5  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  4.0

Spread  
Tolerance  
cm<sup>3</sup>/1000 strokes : 5.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 7.0

Aneroid pressure  
hPa : 900  
Rated speed rpm : 500  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 111.5  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  1.5  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  4.0

Aneroid pressure  
hPa : -  
Rated speed rpm : 500  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 70.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  1.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  3.0

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#### BREAKAWAY

Rack travel in mm : 11.90  
Rated speed rpm : 1145  
Tolerance 1/min :  $\pm$  5

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#### STARTING FUEL DELIVERY

Rated speed rpm : 100  
rack travel mm : 20.00  
Tolerance mm :  $\pm$  1.00  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 85.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  7.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  10.0

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LOW IDLE

Del. quantity  
cm<sup>3</sup>/1000 strokes : 18.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  2.0  
Check tolerance  
cm<sup>3</sup>/1000s. :  $\pm$  4.5  
Speed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 3.5  
Check tolerance  
cm<sup>3</sup>/1000s. : 5.5

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End of test specification sheet

# BOSCH INJ. PUMP TEST SPECIFICATIONS

## Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 22.08.95  
Test oil : ISO 4113

Combination No. : 0 403 474 008H

Injection pump  
Pump designation : PES4MW100/720RS1181  
EP type number : 0 413 404 107

Governor  
Governor design. : RSV400...1000MW1A333  
Governor no. : 0 420 085 118

Cust. part No. :

Customer-spec. information  
Customer : LIEBHERR  
Motor : D 914 T  
Power KW : 106.0

## TEST BENCH REQUIREMENTS

Test oil inlet  
temp. °C : 40  
Tolerance °C : ± 2.0

Overflow valve : 1 417 413 049

Inlet press. bar : 1.5

Test nozzle holder  
assembly : 0 681 343 009

Opening pressure  
bar : 173.5  
Tolerance bar : ± 1.5

Test lines : 1 680 750 008

Outside diameter : 6.0

x inside diameter : 2.0  
x length mm : 600

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## REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

## BEGINNING OF DELIVERY

Test pressure bar : 31.0  
Tolerance bar : ± 1.0

Prestroke mm : 3.05  
Tolerance mm : ± 0.05

test only : ± 0.10

Rack travel in mm : 10.50  
Tolerance mm : ± 1.50

Firing order : 1- 3- 4- 2

Phasing : 0-90-180-270  
Tolerance : ± 0.50  
Check  
tolerance °NW : ± 0.75

## BASIC SETTING

Rated speed rpm : 1000

Rack travel in mm : 10.65  
Tolerance mm : ± 0.05

Del. quantity  
cm<sup>3</sup>/1000 strokes : 137.5

Tolerance  
cm<sup>3</sup>/1000 strokes : ± 1.0

Check tolerance  
cm<sup>3</sup>/1000S. : ± 4.0

Speed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 4.0

Check tolerance  
cm<sup>3</sup>/1000S. : 7.5

Rated speed rpm : 400

Rack travel in mm : 6.25  
 Tolerance mm :  $\pm$  0.10  
 Del. quantity  
 cm<sup>3</sup>/1000 strokes : 22.0  
 Tolerance  
 cm<sup>3</sup>/1000 strokes :  $\pm$  2.0  
 Check tolerance  
 cm<sup>3</sup>/1000S. :  $\pm$  4.5  
 Spreed  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : 3.5  
 Check tolerance  
 cm<sup>3</sup>/1000S. : 5.5

#### (B) SETTING OF INJECTION PUMP WITH GOVERNOR

##### GUIDE SLEEVE POSITION

Rated speed rpm : 800  
 Rack travel in mm : 0.65  
 Tolerance mm :  $\pm$  0.35  
 governor spring  
 pre-tension  
 click setting x : 4.00

##### FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1000  
 Aneroid pressure  
 hPa : -  
 Del. quantity  
 cm<sup>3</sup>/1000 strokes : 137.5  
 Tolerance  
 cm<sup>3</sup>/1000 strokes :  $\pm$  1.0  
 Check tolerance  
 cm<sup>3</sup>/1000S. :  $\pm$  4.0  
 Spreed  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : 4.0  
 Check tolerance  
 cm<sup>3</sup>/1000S. : 7.5

##### RATED SPEED

control lever  
 position degree : 103.0  
 tolerance degree :  $\pm$  4.0  
 rack travel mm : 9.65  
 Rated speed rpm : 1025

Tolerance 1/min :  $\pm$  5

rack travel mm : 4.00  
 Rated speed rpm : 1065  
 Tolerance 1/min :  $\pm$  10

rack travel mm : 1.00  
 Tolerance mm :  $\pm$  0.70  
 Rated speed rpm : 1175

rack travel mm : 4.00  
 Rated speed rpm : 1065

##### LOW IDLE

control lever  
 position degree : 76.0  
 tolerance degree :  $\pm$  4.0

##### Setting point w/out bumper spring

Rated speed rpm : 400  
 rack travel mm : 5.25

##### Testing:

Rated speed rpm : 400  
 rack travel mm : 6.25  
 Tolerance mm :  $\pm$  0.10

Rated speed rpm : 100

CRT mm min. :  $>$  19.00

##### TORQUE CONTROL

Rated speed rpm : 1000  
 rack travel mm : 10.65  
 Tolerance mm :  $\pm$  0.05

Rated speed rpm : 500  
 rack travel mm : 10.65  
 Tolerance mm :  $\pm$  0.05

Rated speed rpm : 700  
 rack travel mm : 10.65  
 Tolerance mm :  $\pm$  0.05

##### FUEL DELIVERY CHARACTERISTICS

Aneroid pressure  
 hPa : -  
 Rated speed rpm : 500

Del. quantity  
cm<sup>3</sup>/1000 strokes : 130.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 2.0  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 5.0  
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 6.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 9.0

Aneroid pressure  
hPa : -  
Rated speed rpm : 700  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 141.5  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 2.0  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 5.0

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#### BREAKAWAY

Rack travel in mm : 9.65  
Rated speed rpm : 1025  
Tolerance 1/min : ± 5

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#### STARTING FUEL DELIVERY

Rated speed rpm : 100  
rack travel mm : 20.00  
Tolerance mm : ± 1.00  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 135.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 5.0  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 8.0

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#### LOW IDLE

Rated speed rpm : 400  
rack travel mm : 6.25  
Tolerance mm : ± 0.10  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 22.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 2.0  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 4.5  
Spreed

Tolerance  
cm<sup>3</sup>/1000 strokes : 3.5  
Check tolerance  
cm<sup>3</sup>/1000S. : 5.5

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End of test specification sheet

# BOSCH INJ. PUMP TEST SPECIFICATIONS

## Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 22.08.95  
Test oil : ISO 4113  
Combination No. : 0 403 474 021D  
Injection pump  
Pump designation : PES4MW100/720RS1181  
EP type number : 0 413 404 107  
Governor  
Governor design. : RSV400...1000MW1A348  
Governor no. : 0 420 085 183

Cust. part No. :

Customer-spec. information  
Customer : LIEBHERR  
Motor : D914T  
Power KW : 106.0

## TEST BENCH REQUIREMENTS

Test oil inlet  
temp. °C : 40  
Tolerance °C : ± 2.0

Overflow valve : 1 417 413 049

Inlet press. bar : 1.5

Test nozzle holder  
assembly : 0 681 343 009

Opening pressure  
bar : 173.5  
Tolerance bar : ± 1.5

Test lines : 1 680 750 008

Outside diameter : 6.0

x inside diameter : 2.0  
x length mm : 600

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## REMARKS

Check electrically unlatched starting fuel delivery (EES) with 24 volt.

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

## BEGINNING OF DELIVERY

Test pressure bar : 31.0  
Tolerance bar : ± 1.0

Prestroke mm : 3.05  
Tolerance mm : ± 0.05

test only : ± 0.10

Rack travel in mm : 10.50  
Tolerance mm : ± 1.50

Firing order : 1- 3- 4- 2

Phasing : 0-90-180-270  
Tolerance : ± 0.50  
Check  
tolerance °NW : ± 0.75

## BASIC SETTING

Rated speed rpm : 1000

Rack travel in mm : 10.65  
Tolerance mm : ± 0.05

Del. quantity  
cm<sup>3</sup>/1000 strokes : 137.5

Tolerance  
cm<sup>3</sup>/1000 strokes : ± 1.0

Check tolerance  
cm<sup>3</sup>/1000S. : ± 4.0

Spread  
Tolerance  
cm<sup>3</sup>/1000 strokes : 4.0



Check tolerance  
 cm<sup>3</sup>/1000S. : 7.5  
 Rated speed rpm : 400  
 Rack travel in mm : 6.25  
 Tolerance mm : ± 0.10  
 Del. quantity  
 cm<sup>3</sup>/1000 strokes : 22.0  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : ± 2.0  
 Check tolerance  
 cm<sup>3</sup>/1000S. : ± 4.5  
 Spread  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : 3.5  
 Check tolerance  
 cm<sup>3</sup>/1000S. : 5.0

#### (B) SETTING OF INJECTION PUMP WITH GOVERNOR

##### GUIDE SLEEVE POSITION

Rated speed rpm : 800  
 Rack travel in mm : 0.65  
 Tolerance mm : ± 0.35  
 governor spring  
 pre-tension  
 click setting x : 4.00

##### FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1000  
 Aneroid pressure  
 hPa : 1250  
 Del. quantity  
 cm<sup>3</sup>/1000 strokes : 137.5  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : ± 1.0  
 Check tolerance  
 cm<sup>3</sup>/1000S. : ± 4.0  
 Spread  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : 4.0  
 Check tolerance  
 cm<sup>3</sup>/1000S. : 7.5

##### RATED SPEED

control lever  
 position degree : 103.0

A13

tolerance degree : ± 4.0  
 rack travel mm : 9.65  
 Rated speed rpm : 1025  
 Tolerance 1/min : ± 5  
 rack travel mm : 4.00  
 Rated speed rpm : 1065  
 Tolerance 1/min : ± 10  
 rack travel mm : 1.00  
 Tolerance mm : ± 0.70  
 Rated speed rpm : 1175  
 rack travel mm : 4.00  
 Rated speed rpm : 1065

##### LOW IDLE

control lever  
 position degree : 76.0  
 tolerance degree : ± 4.0

##### Setting point w/out bumper spring

Rated speed rpm : 400  
 rack travel mm : 6.25

##### Testing:

Rated speed rpm : 400  
 rack travel mm : 5.25  
 Tolerance mm : ± 0.10

Rated speed rpm : 100

CRT mm min. : > 19.00

##### TORQUE CONTROL

Rated speed rpm : 1000  
 rack travel mm : 10.65  
 Tolerance mm : ± 0.05

Rated speed rpm : 500  
 rack travel mm : 10.65  
 Tolerance mm : ± 0.05

Rated speed rpm : 700  
 rack travel mm : 10.65  
 Tolerance mm : ± 0.05

##### ANEROID/ALTITUDE COMPENSATOR TEST

## SETTING

Rated speed rpm : 500  
Pressure hPa : -  
rack travel mm : 10.20  
Tolerance mm :  $\pm$  0.05

## MEASUREMENT

Pressure hPa : 1250  
Rated speed rpm : 500  
rack travel mm : 10.65  
Tolerance mm :  $\pm$  0.05

Rated speed rpm : 500

Pressure hPa : 420  
rack travel mm : 10.30  
Tolerance mm :  $\pm$  0.05

Pressure hPa : 460  
rack travel mm : 10.55  
Tolerance mm :  $\pm$  0.10

## FUEL DELIVERY CHARACTERISTICS

Aneroid pressure  
hPa : 1250  
Rated speed rpm : 500  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 130.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  2.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  5.0  
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 6.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 9.0

Aneroid pressure  
hPa : 1250  
Rated speed rpm : 700  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 141.5  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  2.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  5.0

Aneroid pressure  
hPa : -  
Rated speed rpm : 500  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 127.5  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  1.0

Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  4.0

## BREAKAWAY

Rack travel in mm : 9.65  
Rated speed rpm : 1025  
Tolerance 1/min :  $\pm$  5

## STARTING FUEL DELIVERY

Rated speed rpm : 100  
rack travel mm : 20.00  
Tolerance mm :  $\pm$  1.00  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 135.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  5.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  8.0

## LOW IDLE

Rated speed rpm : 400  
rack travel mm : 6.25  
Tolerance mm :  $\pm$  0.10  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 22.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  2.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  4.5  
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 3.5  
Check tolerance  
cm<sup>3</sup>/1000S. : 5.0

End of test specification sheet

# BOSCH INJ. PUMP TEST SPECIFICATIONS

## Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 04.09.95  
Test oil : ISO 4113

Combination No. : 0 403 476 096

Injection pump  
Pump designation : PES6MW100/320RS1132  
EP type number : 0 413 406 124

Governor  
Governor design. : RSV650...750MW4A311  
: -4  
Governor no. : 0 420 085 161

Cust. part No. :

Customer-spec. information  
Customer : PENTA  
Motor : TD 61 AG  
Power KW : 93.0

## TEST BENCH REQUIREMENTS

Inlet line : 3.1

Test oil inlet  
temp. °C : 40  
Tolerance °C : ± 2.0

Overflow valve : 1 457 413 010

Inlet press. bar : 1.5

Test nozzle holder  
assembly : 0 681 343 009

Opening pressure  
bar : 173.5  
Tolerance bar : ± 1.5

Test lines : 1 680 750 014

Outside diameter : 6.0

x inside diameter : 2.0  
x length mm : 600

## REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

## BEGINNING OF DELIVERY

Test pressure bar : 31.0  
Tolerance bar : ± 1.0

Prestroke mm : 2.95  
Tolerance mm : ± 0.05

test only : ± 0.10

Rack travel in mm : 10.50  
Tolerance mm : ± 1.50

Firing order : 1- 5- 3- 6- 2-  
: 4

Phasing : 0-60-120-180-240  
: -300

Tolerance : ± 0.50  
Check  
tolerance °NW : ± 0.75

Start of delivery mark

Barrel no. : 1

## BASIC SETTING

Rated speed rpm : 700

Rack travel in mm : 10.85  
Tolerance mm : ± 0.05

Del. quantity  
cm<sup>3</sup>/1000 strokes : 100.0

Tolerance  
cm<sup>3</sup>/1000 strokes : ± 1.0

Check tolerance  
cm<sup>3</sup>/1000S. : ± 3.0

---

Spreed  
Tolerance  
cm3/1000 strokes : 3.5

---

Check tolerance  
cm3/1000S. : 6.0

Rated speed rpm : 650

Rack travel in mm : 6.20  
Tolerance mm :  $\pm$  0.30

Del. quantity  
cm3/1000 strokes : 19.0

Tolerance  
cm3/1000 strokes :  $\pm$  2.0

Check tolerance  
cm3/1000S. :  $\pm$  4.5

Spreed  
Tolerance  
cm3/1000 strokes : 3.5

Check tolerance  
cm3/1000S. : 5.5

#### (B) SETTING OF INJECTION PUMP WITH GOVERNOR

---

##### GUIDE SLEEVE POSITION

Rated speed rpm : 800

Rack travel in mm : 0.65  
Tolerance mm :  $\pm$  0.35

governor spring  
pre-tension  
click setting x : 4.00

---

##### FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 700

Aneroid pressure  
hPa : -

Del. quantity  
cm3/1000 strokes : 100.0

Tolerance  
cm3/1000 strokes :  $\pm$  1.0

Check tolerance  
cm3/1000S. :  $\pm$  3.0

Spreed  
Tolerance  
cm3/1000 strokes : 3.5

Check tolerance  
cm3/1000S. : 6.0

---

##### RATED SPEED

control lever  
position degree : 87.0  
tolerance degree :  $\pm$  4.0

rack travel mm : 10.80  
Rated speed rpm : 751  
Tolerance 1/min :  $\pm$  3

rack travel mm : 4.00  
Rated speed rpm : 781  
Tolerance 1/min :  $\pm$  8

rack travel mm : 1.00  
Tolerance mm :  $\pm$  0.70  
Rated speed rpm : 950

rack travel mm : 4.00  
Rated speed rpm : 813

---

##### LOW IDLE

control lever  
position degree : 82.0  
tolerance degree :  $\pm$  4.0

##### Setting point w/out bumper spring

Rated speed rpm : 650  
rack travel mm : 5.70

##### Testing:

Rated speed rpm : 650  
rack travel mm : 6.20  
Tolerance mm :  $\pm$  0.20

Rated speed rpm : 100

CRT mm min. :  $>$  19.00

---

##### TORQUE CONTROL

Rated speed rpm : 700  
rack travel mm : 10.85  
Tolerance mm :  $\pm$  0.05

---

##### BREAKAWAY

Rack travel in mm : 10.80  
Rated speed rpm : 751  
Tolerance 1/min : +- 3

---

#### STARTING FUEL DELIVERY

Rated speed rpm : 100  
rack travel mm : 20.00  
Tolerance mm : +- 1.00  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 140.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : +- 10.0  
Check tolerance  
cm<sup>3</sup>/1000S. : +- 13.0

---

#### LOW IDLE

Rated speed rpm : 650  
rack travel mm : 6.20  
Tolerance mm : +- 0.30  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 19.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : +- 2.0  
Check tolerance  
cm<sup>3</sup>/1000S. : +- 4.5  
Speed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 3.5  
Check tolerance  
cm<sup>3</sup>/1000S. : 5.5

---

End of test specification sheet

# BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and  
adjustment instructions.  
See microcard(s) W400/...

Edition : 05.09.95

Test oil : ISO 4113

Combination No. : 0 403 476 102

Injection pump

Pump designation : PES6MW100/320RS1211

EP type number : 0 413 406 202

Governor

Governer design. : RSV650...750MW4A311  
: -5

Governer no. : 0 420 085 166

Cust. part No. :

Customer-spec. information

Customer : PENTA

Motor : TID 61 AG

Power KW : 115.0

## TEST BENCH REQUIREMENTS

Inlet line : 3.1

Test oil inlet

temp. °C : 40

Tolerance °C : ± 2.0

Overflow valve : 1 457 413 010

Inlet press. bar : 1.5

Test nozzle holde

assembly : 0 681 343 009

Opening pressure

bar : 173.5

Tolerance bar : ± 1.5

Test lines : 1 680 750 014

Outside diameter : 6.0

x inside diameter : 2.0

x length mm : 600

## REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values \_\_\_\_\_

## BEGINNING OF DELIVERY

Test pressure bar : 31.0

Tolerance bar : ± 1.0

Prestroke mm : 2.95

Tolerance mm : ± 0.05

test only : ± 0.10

Rack travel in mm : 10.50

Tolerance mm : ± 1.50

Firing order : 1- 5- 3- 6- 2-  
: 4

Phasing : 0-60-120-180-240  
: -300

Tolerance : ± 0.50

Check  
tolerance \*NW : ± 0.75

Start of delivery mark

Barrel no. : 1

## BASIC SETTING

Rated speed rpm : 700

Rack travel in mm : 11.25

Tolerance mm : ± 0.05

Del. quantity

cm<sup>3</sup>/1000 strokes : 125.0

Tolerance

cm<sup>3</sup>/1000 strokes : ± 1.0

Check tolerance

cm<sup>3</sup>/1000S. : ± 3.0

---

Spread  
Tolerance  
cm<sup>3</sup>/1000 strokes : 3.5

---

Check tolerance  
cm<sup>3</sup>/1000S. : 6.0

Rated speed rpm : 650

Rack travel in mm : 5.25  
Tolerance mm : ± 0.40

Del. quantity  
cm<sup>3</sup>/1000 strokes : 19.0

Tolerance  
cm<sup>3</sup>/1000 strokes : ± 2.0

Check tolerance  
cm<sup>3</sup>/1000S. : ± 4.5

Spread  
Tolerance  
cm<sup>3</sup>/1000 strokes : 3.5

Check tolerance  
cm<sup>3</sup>/1000S. : 5.5

#### (B) SETTING OF INJECTION PUMP WITH GOVERNOR

---

##### GUIDE SLEEVE POSITION

Rated speed rpm : 800

Rack travel in mm : 0.65  
Tolerance mm : ± 0.35

governor spring  
pre-tension  
click setting x : 6.00

---

##### FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 700  
Aneroid pressure  
hPa : -

Del. quantity  
cm<sup>3</sup>/1000 strokes : 125.0

Tolerance  
cm<sup>3</sup>/1000 strokes : ± 1.0

Check tolerance  
cm<sup>3</sup>/1000S. : ± 3.0

Spread  
Tolerance  
cm<sup>3</sup>/1000 strokes : 3.5

Check tolerance  
cm<sup>3</sup>/1000S. : 6.0

---

##### RATED SPEED

control lever  
position degree : 88.0  
tolerance degree : ± 4.0

rack travel mm : 10.20  
Rated speed rpm : 751  
Tolerance 1/min : ± 3

rack travel mm : 4.00  
Rated speed rpm : 781  
Tolerance 1/min : ± 8

rack travel mm : 1.00  
Tolerance mm : ± 0.70  
Rated speed rpm : 1000

rack travel mm : 4.00  
Rated speed rpm : 803

---

##### LOW IDLE

control lever  
position degree : 82.0  
tolerance degree : ± 4.0

##### Setting point w/out bumper spring

Rated speed rpm : 650  
rack travel mm : 4.25

##### Testing:

Rated speed rpm : 650  
rack travel mm : 5.25  
Tolerance mm : ± 0.25

Rated speed rpm : 100

CRT mm min. : > 19.00

---

##### TORQUE CONTROL

Rated speed rpm : 700  
rack travel mm : 11.25  
Tolerance mm : ± 0.05

---

##### BREAKAWAY

Rack travel in mm : 10.20  
Rated speed rpm : 751  
Tolerance 1/min :  $\pm$  3

---

#### STARTING FUEL DELIVERY

Rated speed rpm : 100  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 185.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  10.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  13.0

---

#### LOW IDLE

Rated speed rpm : 650  
rack travel mm : 5.25  
Tolerance mm :  $\pm$  0.40  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 19.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  2.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  4.5  
Speed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 3.5  
Check tolerance  
cm<sup>3</sup>/1000S. : 5.5

---

End of test specification sheet



# BOSCH INJ. PUMP TEST SPECIFICATIONS

## Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 06.09.95  
Test oil : ISO 4113  
Combination No. : 0 403 476 108  
Injection pump  
Pump designation : PES6MW100/320RS1132  
EP type number : 0 413 406 124  
Governor  
Governor design. : RSV325...1400MW2A314  
: -3  
Governor no. : 0 420 085 173  
Cust. part No. :

## Customer-spec. information

Customer : PENTA  
Motor : TD 610M  
Power KW : 147.0

## TEST BENCH REQUIREMENTS

Inlet line : 3.1  
Test oil inlet  
temp. °C : 40  
Tolerance °C : ± 2.0  
Overflow valve : 1 457 413 010  
Inlet press. bar : 1.5  
Test nozzle holder  
assembly : 0 681 343 009  
Opening pressure  
bar : 173.5  
Tolerance bar : ± 1.5  
Test lines : 1 680 750 014  
Outside diameter : 6.0

A21

x inside diameter : 2.0  
x length mm : 600

## REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

## BEGINNING OF DELIVERY

Test pressure bar : 31.0  
Tolerance bar : ± 1.0  
Prestroke mm : 2.95  
Tolerance mm : ± 0.05  
test only : ± 0.10  
Rack travel in mm : 10.50  
Tolerance mm : ± 1.50  
Firing order : 1- 5- 3- 6- 2-  
: 4  
Phasing : 0-60-120-180-240  
: -300  
Tolerance : ± 0.50  
Check  
tolerance °NW : ± 0.75  
Start of delivery mark  
Barrel no. : 1

## BASIC SETTING

Rated speed rpm : 1000  
Rack travel in mm : 11.35  
Tolerance mm : ± 0.05  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 97.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 1.0  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 3.0

|                    |     |
|--------------------|-----|
| Spreed             |     |
| Tolerance          |     |
| cm3/1000 strokes : | 3.5 |

|                 |     |
|-----------------|-----|
| Check tolerance |     |
| cm3/1000S. :    | 6.0 |

|                   |     |
|-------------------|-----|
| Rated speed rpm : | 325 |
|-------------------|-----|

|                     |        |
|---------------------|--------|
| Rack travel in mm : | 6.10   |
| Tolerance mm :      | + 0.20 |

|                    |      |
|--------------------|------|
| Del. quantity      |      |
| cm3/1000 strokes : | 14.0 |

|                    |       |
|--------------------|-------|
| Tolerance          |       |
| cm3/1000 strokes : | + 2.0 |

|                 |       |
|-----------------|-------|
| Check tolerance |       |
| cm3/1000S. :    | + 4.5 |

|                    |     |
|--------------------|-----|
| Spreed             |     |
| Tolerance          |     |
| cm3/1000 strokes : | 3.5 |

|                 |     |
|-----------------|-----|
| Check tolerance |     |
| cm3/1000S. :    | 5.5 |

#### (B) SETTING OF INJECTION PUMP WITH GOVERNOR

##### GUIDE SLEEVE POSITION

|                   |     |
|-------------------|-----|
| Rated speed rpm : | 800 |
|-------------------|-----|

|                     |        |
|---------------------|--------|
| Rack travel in mm : | 0.65   |
| Tolerance mm :      | + 0.35 |

|                   |      |
|-------------------|------|
| governor spring   |      |
| pre-tension       |      |
| click setting x : | 6.25 |

##### FULL LOAD DELIVERY AT FULL LOAD STOP

|                   |      |
|-------------------|------|
| Rated speed rpm : | 1000 |
| Aneroid pressure  |      |
| hPa :             | 800  |

|                    |      |
|--------------------|------|
| Del. quantity      |      |
| cm3/1000 strokes : | 97.0 |

|                    |       |
|--------------------|-------|
| Tolerance          |       |
| cm3/1000 strokes : | + 1.0 |

|                 |       |
|-----------------|-------|
| Check tolerance |       |
| cm3/1000S. :    | + 3.0 |

|                    |     |
|--------------------|-----|
| Spreed             |     |
| Tolerance          |     |
| cm3/1000 strokes : | 3.5 |

|                 |     |
|-----------------|-----|
| Check tolerance |     |
| cm3/1000S. :    | 6.0 |

##### RATED SPEED

|                    |       |
|--------------------|-------|
| control lever      |       |
| position degree :  | 108.0 |
| tolerance degree : | + 4.0 |

|                   |       |
|-------------------|-------|
| rack travel mm :  | 10.30 |
| Rated speed rpm : | 1280  |
| Tolerance 1/min : | + 5   |

|                   |      |
|-------------------|------|
| rack travel mm :  | 4.00 |
| Rated speed rpm : | 1385 |
| Tolerance 1/min : | + 10 |

|                   |        |
|-------------------|--------|
| rack travel mm :  | 1.00   |
| Tolerance mm :    | + 0.70 |
| Rated speed rpm : | 1575   |

|                   |      |
|-------------------|------|
| rack travel mm :  | 4.00 |
| Rated speed rpm : | 1420 |

##### LOW IDLE

|                    |       |
|--------------------|-------|
| control lever      |       |
| position degree :  | 80.0  |
| tolerance degree : | + 4.0 |

##### Setting point w/out bumper spring

|                   |      |
|-------------------|------|
| Rated speed rpm : | 325  |
| rack travel mm :  | 5.60 |

##### Testing:

|                   |        |
|-------------------|--------|
| Rated speed rpm : | 325    |
| rack travel mm :  | 6.10   |
| Tolerance mm :    | + 0.10 |

|                   |      |
|-------------------|------|
| rack travel mm :  | 2.00 |
| Rated speed rpm : | 620  |
| Tolerance 1/min : | + 30 |

|                   |     |
|-------------------|-----|
| Rated speed rpm : | 100 |
|-------------------|-----|

|               |         |
|---------------|---------|
| CRT mm min. : | > 19.00 |
|---------------|---------|

##### TORQUE CONTROL

|                   |        |
|-------------------|--------|
| Rated speed rpm : | 1000   |
| rack travel mm :  | 11.35  |
| Tolerance mm :    | + 0.05 |

---

ANEROID/ALTITUDE  
COMPENSATOR TEST

SETTING

Rated speed rpm : 1000  
Pressure hPa : 800  
rack travel mm : 11.35  
Tolerance mm :  $\pm$  0.05

MEASUREMENT

Pressure hPa : -  
Rated speed rpm : 1000  
rack travel mm : 10.15  
Tolerance mm :  $\pm$  0.05

Rated speed rpm : 1000

Pressure hPa : 420  
rack travel mm : 11.15  
Tolerance mm :  $\pm$  0.15

Pressure hPa : 130  
rack travel mm : 10.25  
Tolerance mm :  $\pm$  0.05

---

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure  
hPa : -  
Rated speed rpm : 1000  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 79.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  1.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  3.0

---

BREAKAWAY

Rack travel in mm : 10.30  
Rated speed rpm : 1280  
Tolerance 1/min :  $\pm$  5

---

STARTING FUEL DELIVERY

Rated speed rpm : 100  
rack travel mm : 20.00  
Tolerance mm :  $\pm$  1.00

Del. quantity  
cm<sup>3</sup>/1000 strokes : 135.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  10.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  13.0

---

LOW IDLE

Rated speed rpm : 325  
rack travel mm : 6.10  
Tolerance mm :  $\pm$  0.20  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 14.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  2.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  4.5  
Speed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 3.5  
Check tolerance  
cm<sup>3</sup>/1000S. : 5.5

---

End of test specification sheet

# BOSCH INJ. PUMP TEST SPECIFICATIONS

## Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 06.09.95

Test oil : ISO 4113

Combination No. : 0 403 476 130

## Injection pump

Pump designation : PES6MW100/320RS1211

EP type number : 0 413 406 202

## Governor

Governor design. : RSV300...900MW1A311

: -6

Governor no. : 0 420 085 224

Cust. part No. :

## Customer-spec. information

Customer : PENTA

Motor : TWD 610 P

## TEST BENCH REQUIREMENTS

Inlet line : 3.1

## Test oil inlet

temp. °C : 40

Tolerance °C : ± 2.0

Overflow valve : 1 457 413 010

Inlet press. bar : 1.5

## Test nozzle holder assembly

: 0 681 343 009

## Opening pressure

bar : 173.5

Tolerance bar : ± 1.5

Test lines : 1 680 750 014

Outside diameter : 6.0

x inside diameter : 2.0

x length mm : 600

## REMARKS

## (A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values \_\_\_\_\_

## BEGINNING OF DELIVERY

Test pressure bar : 31.0

Tolerance bar : ± 1.0

Prestroke mm : 2.95

Tolerance mm : ± 0.05

test only : ± 0.10

Rack travel in mm : 10.50

Tolerance mm : ± 1.50

Firing order : 1- 5- 3- 6- 2-  
: 4

Phasing : 0-60-120-180-240

: -300

Tolerance : ± 0.50

## Check

tolerance °NW : ± 0.75

Start of delivery mark

Barrel no. : 1

## BASIC SETTING

Rated speed rpm : 900

Rack travel in mm : 9.70

Tolerance mm : ± 0.05

## Del. quantity

cm<sup>3</sup>/1000 strokes : 98.0

## Tolerance

cm<sup>3</sup>/1000 strokes : ± 1.0

## Check tolerance

cm<sup>3</sup>/1000s. : ± 3.0

---

Spread  
Tolerance  
cm<sup>3</sup>/1000 strokes : 3.5

---

Check tolerance  
cm<sup>3</sup>/1000S. : 6.0

Rated speed rpm : 300

Rack travel in mm : 6.00  
Tolerance mm : +- 0.40

Del. quantity  
cm<sup>3</sup>/1000 strokes : 19.0

Tolerance  
cm<sup>3</sup>/1000 strokes : +- 2.0

Check tolerance  
cm<sup>3</sup>/1000S. : +- 4.5

Spread  
Tolerance  
cm<sup>3</sup>/1000 strokes : 3.5

Check tolerance  
cm<sup>3</sup>/1000S. : 5.5

#### (B) SETTING OF INJECTION PUMP WITH GOVERNOR

---

##### GUIDE SLEEVE POSITION

Rated speed rpm : 800

Rack travel in mm : 0.65  
Tolerance mm : +- 0.35

governor spring  
pre-tension  
click setting x : 6.00

---

##### FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 900  
Aneroid pressure  
hPa : -

Del. quantity  
cm<sup>3</sup>/1000 strokes : 98.0

Tolerance  
cm<sup>3</sup>/1000 strokes : +- 1.0

Check tolerance  
cm<sup>3</sup>/1000S. : +- 3.0

Spread  
Tolerance  
cm<sup>3</sup>/1000 strokes : 3.5

Check tolerance  
cm<sup>3</sup>/1000S. : 6.0

---

##### RATED SPEED

control lever  
position degree : 106.0  
tolerance degree : +- 4.0

rack travel mm : 8.70  
Rated speed rpm : 920  
Tolerance 1/min : +- 3

rack travel mm : 4.00  
Rated speed rpm : 975  
Tolerance 1/min : +- 8

rack travel mm : 1.00  
Tolerance mm : +- 0.70  
Rated speed rpm : 1050

rack travel mm : 4.00  
Rated speed rpm : 1005

---

##### LOW IDLE

control lever  
position degree : 82.0  
tolerance degree : +- 4.0

##### Setting point w/out bumper spring

Rated speed rpm : 300  
rack travel mm : 5.00

##### Testing:

Rated speed rpm : 300  
rack travel mm : 6.00  
Tolerance mm : +- 0.25

Rated speed rpm : 100

CRT mm min. : > 19.00

---

##### TORQUE CONTROL

Rated speed rpm : 900  
rack travel mm : 9.70  
Tolerance mm : +- 0.05

---

##### BREAKAWAY

Rack travel in mm : 8.70  
Rated speed rpm : 920  
Tolerance 1/min :  $\pm$  3

---

#### STARTING FUEL DELIVERY

Rated speed rpm : 100  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 150.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  10.0  
Check tolerance  
cm<sup>3</sup>/1000s. :  $\pm$  13.0

---

#### LOW IDLE

Rated speed rpm : 300  
rack travel mm : 6.00  
Tolerance mm :  $\pm$  0.40  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 19.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  2.0  
Check tolerance  
cm<sup>3</sup>/1000s. :  $\pm$  4.5  
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 3.5  
Check tolerance  
cm<sup>3</sup>/1000s. : 5.5

---

End of test specification sheet

# BOSCH INJ. PUMP TEST SPECIFICATIONS

## Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 06.09.95  
Test oil : ISO 4113  
  
Combination No. : 0 403 476 132  
  
Injection pump  
Pump designation : PES6MW100/320RS1132  
: -1  
EP type number : 0 413 406 230  
  
Governor  
Governor design. : RSV325...1200MWOA359  
: -1  
Governor no. : 0 420 085 241  
  
Cust. part No. :

Customer-spec. information  
Customer : PENTA  
Motor : TD 630ME  
Power KW : 119.0

## TEST BENCH REQUIREMENTS

Inlet line : 3.1  
  
Test oil inlet  
temp. °C : 40  
Tolerance °C : ± 2.0  
  
Overflow valve : 1 457 413 010  
  
Inlet press. bar : 1.5  
  
Test nozzle holde  
assembly : 0 681 343 009  
  
Opening pressure  
bar : 173.5  
Tolerance bar : ± 1.5  
  
Test Lines : 1 680 750 014

Outside diameter : 6.0  
x inside diameter : 2.0  
x length mm : 600

## REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

## BEGINNING OF DELIVERY

Test pressure bar : 31.0  
Tolerance bar : ± 1.0  
  
Prestroke mm : 2.95  
Tolerance mm : ± 0.05  
  
test only : ± 0.10  
  
Rack travel in mm : 10.50  
Tolerance mm : ± 1.50  
  
Firing order : 1- 5- 3- 6- 2-  
: 4  
  
Phasing : 0-60-120-180-240  
: -300  
Tolerance : ± 0.50  
Check  
tolerance °NW : ± 0.75  
  
Start of delivery mark  
  
Barrel no. : 1

## BASIC SETTING

Rated speed rpm : 700  
  
Rack travel in mm : 12.65  
Tolerance mm : ± 0.05  
  
Del. quantity  
cm3/1000 strokes : 116.0  
  
Tolerance  
cm3/1000 strokes : ± 1.0

Check tolerance  
cm<sup>3</sup>/1000S. : +- 3.0

---

Spread  
Tolerance  
cm<sup>3</sup>/1000 strokes : 3.5

---

Check tolerance  
cm<sup>3</sup>/1000S. : 6.0

Rated speed rpm : 325

Rack travel in mm : 6.00  
Tolerance mm : +- 0.20

Del. quantity  
cm<sup>3</sup>/1000 strokes : 14.0

Tolerance  
cm<sup>3</sup>/1000 strokes : +- 2.0

Check tolerance  
cm<sup>3</sup>/1000S. : +- 4.5

Spread  
Tolerance  
cm<sup>3</sup>/1000 strokes : 3.5

Check tolerance  
cm<sup>3</sup>/1000S. : 5.5

#### (B) SETTING OF INJECTION PUMP WITH GOVERNOR

---

##### GUIDE SLEEVE POSITION

Rated speed rpm : 800

Rack travel in mm : 0.65  
Tolerance mm : +- 0.35

governor spring  
pre-tension  
click setting x : 3.20

---

##### FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 700  
Aneroid pressure  
hPa : 1000

Del. quantity  
cm<sup>3</sup>/1000 strokes : 116.0

Tolerance  
cm<sup>3</sup>/1000 strokes : +- 1.0

Check tolerance  
cm<sup>3</sup>/1000S. : +- 3.0

Spread  
Tolerance  
cm<sup>3</sup>/1000 strokes : 3.5

Check tolerance  
cm<sup>3</sup>/1000S. : 6.0

---

##### RATED SPEED

control lever  
position degree : 96.0  
tolerance degree : +- 4.0

rack travel mm : 11.60  
Rated speed rpm : 1225  
Tolerance 1/min : +- 5

rack travel mm : 4.00  
Rated speed rpm : 1275  
Tolerance 1/min : +- 10

rack travel mm : 1.00  
Tolerance mm : +- 0.70  
Rated speed rpm : 1350

rack travel mm : 4.00  
Rated speed rpm : 1295

---

##### LOW IDLE

control lever  
position degree : 69.0  
tolerance degree : +- 4.0

##### Setting point w/out bumper spring

Rated speed rpm : 325  
rack travel mm : 5.50

##### Testing:

Rated speed rpm : 325  
rack travel mm : 6.00  
Tolerance mm : +- 0.10

rack travel mm : 2.00  
Rated speed rpm : 490  
Tolerance 1/min : +- 30

Rated speed rpm : 100

CRT mm min. : > 19.00

---

##### TORQUE CONTROL

Rated speed rpm : 700  
rack travel mm : 12.65  
Tolerance mm : +- 0.05



---

ANEROID/ALTITUDE  
COMPENSATOR TEST

SETTING

Rated speed rpm : 700  
Pressure hPa : 1000  
rack travel mm : 12.65  
Tolerance mm :  $\pm$  0.05

MEASUREMENT

Pressure hPa : -  
Rated speed rpm : 700  
rack travel mm : 10.55  
Tolerance mm :  $\pm$  0.05

Rated speed rpm : 700

Pressure hPa : 610  
rack travel mm : 12.45  
Tolerance mm :  $\pm$  0.15

Pressure hPa : 270  
rack travel mm : 10.75  
Tolerance mm :  $\pm$  0.05

---

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure  
hPa : -  
Rated speed rpm : 700  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 77.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  1.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  3.0

---

BREAKAWAY

Rack travel in mm : 11.60  
Rated speed rpm : 1225  
Tolerance 1/min :  $\pm$  5

---

STARTING FUEL DELIVERY

Rated speed rpm : 100  
rack travel mm : 20.00  
Tolerance mm :  $\pm$  1.00

Del. quantity  
cm<sup>3</sup>/1000 strokes : 135.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  10.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  13.0

---

LOW IDLE

Rated speed rpm : 325  
rack travel mm : 6.00  
Tolerance mm :  $\pm$  0.20  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 14.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  2.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  4.5  
Speed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 3.5  
Check tolerance  
cm<sup>3</sup>/1000S. : 5.5

---

End of test specification sheet

# BOSCH INJ. PUMP TEST SPECIFICATIONS

## Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 11.08.95

Test oil : ISO 4113

Combination No. : 0 401 430 015

## Injection pump

Pump designation : PE12R120/520/6RS1510

EP type number : 0 411 420 002

## Governor

Governer design. : RQV300...1150R7K

Governer no. : 0 421 415 007

Cust. part No. : 1 227 6584

## Customer-spec. information

Customer : MWM

Motor : TBD 616

## TEST BENCH REQUIREMENTS

Inlet line : 3.1

## Test oil inlet

temp. °C : 40

Tolerance °C : ± 2.0

Overflow valve : 2 417 413 082

Inlet press. bar : 3.0

Tolerance bar : ± 0.1

## Test nozzle holde assembly

: 1 688 901 105

## Opening pressure

bar : 208.5

Tolerance bar : ± 1.5

Test lines : 1 680 750 089

Outside diameter : 8.0

x inside diameter : 3.0

x length mm : 600

## REMARKS

## (A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values \_\_\_\_\_

## BEGINNING OF DELIVERY

Test pressure bar : 26.0

Tolerance bar : ± 1.0

Prestroke mm : 4.95

Tolerance mm : ± 0.05

test only : ± 0.10

Rack travel in mm : 21.00

Tolerance mm : ± 0.50

Firing order : 1- 2- 9-10- 5- 6  
: - 11- 12- 3- 4  
: - 7- 8

Phasing : 0-30-60-90-120-150

: -180-210-240-270

: -300-330

Tolerance : ± 0.30

Check

tolerance °NW : ± 0.50

## Start of delivery mark

Barrel no. : 1

## BASIC SETTING

Rated speed rpm : 1150

Rack travel in mm : 14.40

Tolerance mm : ± 0.05

## Del. quantity

cm<sup>3</sup>/1000 strokes : 387.0

## Tolerance

cm<sup>3</sup>/1000 strokes : ± 1.0

Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  4.0

---

Spread  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0

---

Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

Rated speed rpm : 300

Rack travel in mm : 4.80

Tolerance mm :  $\pm$  0.20

Del. quantity  
cm<sup>3</sup>/1000 strokes : 30.0

Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  3.0

Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  6.0

Spread  
Tolerance  
cm<sup>3</sup>/1000 strokes : 10.0

Check tolerance  
cm<sup>3</sup>/1000S. : 14.0

---

(B) SETTING OF INJECTION PUMP  
WITH GOVERNOR

---

GUIDE SLEEVE TRAVEL

Rated speed rpm : 300  
guide sleeve  
travel mm : 0.93  
Tolerance mm :  $\pm$  0.20

Rated speed rpm : 1215  
guide sleeve  
travel mm : 9.95  
Tolerance mm :  $\pm$  0.15

Rated speed rpm : 790  
guide sleeve  
travel mm : 4.81  
Tolerance mm :  $\pm$  0.25

Rated speed rpm : 1430  
guide sleeve  
travel mm : 13.50  
Tolerance mm :  $\pm$  0.50

---

GUIDE SLEEVE POSITION

Rated speed rpm : 1330

Rack travel in mm : 9.00  
Tolerance mm :  $\pm$  1.50

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---

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1150  
Aneroid pressure  
hPa : 1500  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 387.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  1.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  4.0  
Spread  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

---

RATED SPEED

control lever  
position degree : 121.0  
tolerance degree :  $\pm$  4.0

rack travel mm : 13.40  
Rated speed rpm : 1195  
Tolerance 1/min :  $\pm$  5

rack travel mm : 4.00  
Rated speed rpm : 1295  
Tolerance 1/min :  $\pm$  15

rack travel mm : 0.50  
Tolerance mm :  $\pm$  0.50  
Rated speed rpm : 1400

---

LOW IDLE

control lever  
position degree : 71.0  
tolerance degree :  $\pm$  4.0

Testing:

Rated speed rpm : 300  
rack travel mm : 4.80  
Tolerance mm :  $\pm$  0.10

Rated speed rpm : 200

CRT mm min. : > 6.30

Rated speed rpm : 370

---

#### TORQUE CONTROL

Rated speed rpm : 1150  
rack travel mm : 14.40  
Tolerance mm :  $\pm$  0.05

Rated speed rpm : 750  
rack travel mm : 11.60  
Tolerance mm :  $\pm$  0.20

Rated speed rpm : 400  
rack travel mm : 10.30  
Tolerance mm :  $\pm$  0.30

---

#### ANEROID/ALTITUDE COMPENSATOR TEST

##### SETTING

Rated speed rpm : 1150  
Pressure hPa : 1500  
rack travel mm : 14.40  
Tolerance mm :  $\pm$  0.05

##### MEASUREMENT

Pressure hPa : -  
Rated speed rpm : 1150  
rack travel mm : 7.90  
Tolerance mm :  $\pm$  0.20

Rated speed rpm : 1150

Pressure hPa : 900  
rack travel mm : 13.60  
Tolerance mm :  $\pm$  0.20

Pressure hPa : 310  
rack travel mm : 9.00  
Tolerance mm :  $\pm$  0.05

---

##### START CUT-OUT

Rated speed rpm : < 250  
Check  
speed 1/min : < 270

---

##### FUEL DELIVERY CHARACTERISTICS

Aneroid pressure  
hPa : 1500  
Rated speed rpm : 750  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 317.0

Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  3.0  
Check tolerance  
cm<sup>3</sup>/1000s. :  $\pm$  6.0

Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 10.0  
Check tolerance  
cm<sup>3</sup>/1000s. : 14.0

Aneroid pressure  
hPa : -  
Rated speed rpm : 500  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 200.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  1.0  
Check tolerance  
cm<sup>3</sup>/1000s. :  $\pm$  4.0  
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 10.0  
Check tolerance  
cm<sup>3</sup>/1000s. : 14.0

---

##### BREAKAWAY

Rack travel in mm : 13.40  
Rated speed rpm : 1195  
Tolerance 1/min :  $\pm$  5

---

##### STARTING FUEL DELIVERY

Rated speed rpm : 100

---

##### LOW IDLE

Rated speed rpm : 300  
rack travel mm : 4.80  
Tolerance mm :  $\pm$  0.20  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 30.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  3.0  
Check tolerance  
cm<sup>3</sup>/1000s. :  $\pm$  6.0  
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 10.0  
Check tolerance  
cm<sup>3</sup>/1000s. : 14.0

---

End of test specification sheet

# BOSCH INJ. PUMP TEST SPECIFICATIONS

## Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 13.09.95  
Test oil : ISO 4113

Combination No. : 0 401 846 991

Injection pump  
Pump designation : PE6P110A320RS3108-1  
EP type number : 0 411 816 757

Governor  
Governor design. : RQV250...1100PA920  
: -10  
Governor no. : 0 421 814 106

Cust. part No. : 425823 P02 RELEASED

Customer-spec. information  
Customer : VOLVO-TRUCK  
Motor : THD 102 KB  
Power KW : 212.0

## TEST BENCH REQUIREMENTS

Inlet line : 3.1

Vibration  
damper  
(RoBo diaphragm) : 4.2

Test oil inlet  
temp. °C : 40  
Tolerance °C : ± 2.0

Overflow valve : 2 417 413 046

Inlet press. bar : 1.5  
Tolerance bar : ± 0.1

Test nozzle holder  
assembly : 0 681 343 009

Opening pressure  
bar : 173.5  
Tolerance bar : ± 1.5

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Test lines : 1 680 750 089

Outside diameter : 8.0

x inside diameter : 3.0  
x length mm : 600

## REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

## BEGINNING OF DELIVERY

Test pressure bar : 26.0  
Tolerance bar : ± 1.0

Prestroke mm : 3.05  
Tolerance mm : ± 0.05

test only : ± 0.10

Rack travel in mm : 10.50  
Tolerance mm : ± 1.50

Firing order : 1- 5- 3- 6- 2-  
: 4

Phasing : 0-60-120-180-240  
: -300  
Tolerance : ± 0.30  
Check  
tolerance °NW : ± 0.75

## Start of delivery mark

Barrel no. : 1

## BASIC SETTING

Rated speed rpm : 700

Rack travel in mm : 14.30  
Tolerance mm : ± 0.05

Del. quantity  
cm<sup>3</sup>/1000 strokes : 191.0

|                               |         |
|-------------------------------|---------|
| Tolerance                     |         |
| cm <sup>3</sup> /1000 strokes | : ± 1.0 |
| Check tolerance               |         |
| cm <sup>3</sup> /1000S.       | : ± 3.0 |
| Spread                        |         |
| Tolerance                     |         |
| cm <sup>3</sup> /1000 strokes | : 4.0   |
| Check tolerance               |         |
| cm <sup>3</sup> /1000S.       | : 7.5   |
| Del. quantity                 |         |
| cm <sup>3</sup> /1000 strokes | : 32.0  |
| Tolerance                     |         |
| cm <sup>3</sup> /1000 strokes | : ± 2.0 |
| Check tolerance               |         |
| cm <sup>3</sup> /1000S.       | : ± 4.5 |
| Spread                        |         |
| Tolerance                     |         |
| cm <sup>3</sup> /1000 strokes | : 3.0   |
| Check tolerance               |         |
| cm <sup>3</sup> /1000S.       | : 6.0   |

#### (B) SETTING OF INJECTION PUMP WITH GOVERNOR

##### GUIDE SLEEVE TRAVEL

|                 |          |
|-----------------|----------|
| Rated speed rpm | : 250    |
| guide sleeve    |          |
| travel mm       | : 1.19   |
| Tolerance mm    | : ± 0.25 |
| Rated speed rpm | : 1146   |
| guide sleeve    |          |
| travel mm       | : 7.81   |
| Tolerance mm    | : ± 0.25 |
| Rated speed rpm | : 1081   |
| guide sleeve    |          |
| travel mm       | : 6.83   |
| Tolerance mm    | : ± 0.25 |
| Rated speed rpm | : 387    |
| guide sleeve    |          |
| travel mm       | : 2.96   |
| Tolerance mm    | : ± 0.25 |
| Rated speed rpm | : 437    |
| guide sleeve    |          |
| travel mm       | : 3.71   |
| Tolerance mm    | : ± 0.25 |
| Rated speed rpm | : 520    |

|                 |          |
|-----------------|----------|
| guide sleeve    |          |
| travel mm       | : 4.67   |
| Tolerance mm    | : ± 0.25 |
| Rated speed rpm | : 1370   |
| guide sleeve    |          |
| travel mm       | : 11.50  |
| Tolerance mm    | : ± 0.50 |

##### GUIDE SLEEVE POSITION

|                   |          |
|-------------------|----------|
| Rated speed rpm   | : 1175   |
| Rack travel in mm | : 16.50  |
| Tolerance mm      | : ± 1.30 |

##### FULL LOAD DELIVERY AT FULL LOAD STOP

|                               |         |
|-------------------------------|---------|
| Rated speed rpm               | : 700   |
| Aneroid pressure              |         |
| hPa                           | : 1200  |
| Del. quantity                 |         |
| cm <sup>3</sup> /1000 strokes | : 191.0 |
| Tolerance                     |         |
| cm <sup>3</sup> /1000 strokes | : ± 1.0 |
| Check tolerance               |         |
| cm <sup>3</sup> /1000S.       | : ± 3.0 |
| Spread                        |         |
| Tolerance                     |         |
| cm <sup>3</sup> /1000 strokes | : 4.0   |
| Check tolerance               |         |
| cm <sup>3</sup> /1000S.       | : 7.5   |

##### RATED SPEED

|                  |          |
|------------------|----------|
| control lever    |          |
| position degree  | : 63.0   |
| tolerance degree | : ± 4.0  |
| control lever    |          |
| position degree  | : 120.0  |
| tolerance degree | : ± 4.0  |
| rack travel mm   | : 13.30  |
| Rated speed rpm  | : 1135   |
| Tolerance 1/min  | : ± 5    |
| rack travel mm   | : 4.00   |
| Rated speed rpm  | : 1240   |
| Tolerance 1/min  | : ± 15   |
| rack travel mm   | : 0.50   |
| Tolerance mm     | : ± 0.50 |
| Rated speed rpm  | : 1350   |

---

## LOW IDLE

control lever  
position degree : 66.0  
tolerance degree :  $\pm$  4.0

control lever  
position degree : 11.0  
tolerance degree :  $\pm$  4.0

### Testing:

Rated speed rpm : 250  
rack travel mm : 5.70  
Tolerance mm :  $\pm$  0.10

Rated speed rpm : 150  
CRT mm min. :  $>$  6.70

Rated speed rpm : 330

---

## TORQUE CONTROL

Rated speed rpm : 700  
rack travel mm : 14.30  
Tolerance mm :  $\pm$  0.05

---

## ANEROID/ALTITUDE COMPENSATOR TEST

### SETTING

Rated speed rpm : 500  
Pressure hPa : 1200  
rack travel mm : 14.30  
Tolerance mm :  $\pm$  0.05

### MEASUREMENT

Pressure hPa : -  
Rated speed rpm : 500  
rack travel mm : 10.15  
Tolerance mm :  $\pm$  0.15

Rated speed rpm : 500

Pressure hPa : 980  
rack travel mm : 3.80  
Tolerance mm :  $\pm$  0.15

Pressure hPa : 240  
rack travel mm : 0.25  
Tolerance mm :  $\pm$  0.05

---

## FUEL DELIVERY CHARACTERISTICS

Aneroid pressure  
hPa : -  
Rated speed rpm : 700  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 113.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  1.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  4.0

---

## BREAKAWAY

Rack travel in mm : 13.30  
Rated speed rpm : 1135  
Tolerance 1/min :  $\pm$  5

---

## STARTING FUEL DELIVERY

Rated speed rpm : 100  
rack travel mm : 10.15  
Tolerance mm :  $\pm$  0.15

---

## LOW IDLE

Del. quantity  
cm<sup>3</sup>/1000 strokes : 32.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  2.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  4.5  
Speed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 3.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 6.0

---

End of test specification sheet



## BOSCH INJ. PUMP TEST SPECIFICATIONS

## Note remarks

Refer to Service Info for test and  
adjustment instructions.  
See microcard(s) W400/...

Edition : 06.09.95  
Test oil : ISO 4113  
Combination No. : 0 402 046 789  
Injection pump  
Pump designation : PES6P120A320RS3139  
EP type number : 0 412 026 718  
Governor  
Governor design. : RQV275...1000PA728  
: -3  
Governor no. : 0 421 813 657  
Cust. part No. : CCEP 5070 -116

## Customer-spec. information

Customer : RVI  
Motor : MIDR 062045 H  
Power kW : 227.0

## TEST BENCH REQUIREMENTS

Inlet line : 3.1  
Test oil inlet  
temp. °C : 40  
Tolerance °C : ± 2.0  
Overflow valve : 2 417 413 071  
Inlet press. bar : 2.5  
Test nozzle holde  
assembly : 1 688 901 019  
Opening pressure  
bar : 208.5  
Tolerance bar : ± 1.5  
Test lines : 1 680 750 075  
Outside diameter : 8.0

B09

x inside diameter : 3.0  
x length mm : 1000

## REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

## BEGINNING OF DELIVERY

Test pressure bar : 26.0  
Tolerance bar : ± 1.0

Prestroke mm : 3.55  
Tolerance mm : ± 0.05

test only : ± 0.10

Rack travel in mm : 10.50  
Tolerance mm : ± 1.50

Firing order : 1- 5- 3- 6- 2-  
: 4

Phasing : 0-60-120-180-240  
: -300  
Tolerance : ± 0.30  
Check  
tolerance °NW : ± 0.50

Start of delivery mark

Barrel no. : 1

## BASIC SETTING

Rated speed rpm : 1000

Del. quantity  
cm<sup>3</sup>/1000 strokes : 197.0

Tolerance  
cm<sup>3</sup>/1000 strokes : ± 1.0

Check tolerance  
cm<sup>3</sup>/1000S. : ± 4.0

Speed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 5.0

---

Check tolerance  
cm<sup>3</sup>/1000S. : 9.0

Del. quantity  
cm<sup>3</sup>/1000 strokes : 27.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 2.0  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 5.0  
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

(B) SETTING OF INJECTION PUMP  
WITH GOVERNOR

---

GUIDE SLEEVE POSITION

Rated speed rpm : 1170  
Rack travel in mm : 16.50  
Tolerance mm : ± 1.30

---

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1000  
Aneroid pressure  
hPa : 1000  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 197.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 1.0  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 4.0  
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 5.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 9.0

---

RATED SPEED

control lever  
position degree : 119.0  
tolerance degree : ± 4.0  
rack travel mm : -1.00  
Rated speed rpm : 1080  
Tolerance 1/min : ± 5  
rack travel mm : -7.15

Rated speed rpm : 1195  
Tolerance 1/min : ± 15  
rack travel mm : -10.65  
Tolerance mm : ± 0.50  
Rated speed rpm : 1300

---

LOW IDLE

control lever  
position degree : 67.0  
tolerance degree : ± 4.0

Testing:

Rated speed rpm : 275  
rack travel mm : -5.30  
Tolerance mm : ± 0.15  
Rated speed rpm : 200  
CRT mm max. : < -3.80  
Rated speed rpm : 370

---

TORQUE CONTROL

Rated speed rpm : 600

---

ANEROID/ALTITUDE  
COMPENSATOR TEST

SETTING

Rated speed rpm : 500  
Pressure hPa : 1000

MEASUREMENT

Pressure hPa : -  
Rated speed rpm : 500  
rack travel mm : -2.20  
Tolerance mm : ± 0.20

Rated speed rpm : 500  
Pressure hPa : 160  
rack travel mm : -1.70  
Tolerance mm : ± 0.10

Pressure hPa : 280  
rack travel mm : -0.75  
Tolerance mm : ± 0.05

---

#### START CUT-OUT

Rated speed rpm : < 195  
Check  
speed 1/min : < 215

---

#### FUEL DELIVERY CHARACTERISTICS

Aneroid pressure  
hPa : 1000  
Rated speed rpm : 600  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 197.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 3.0  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 6.0

Aneroid pressure  
hPa : -  
Rated speed rpm : 500  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 104.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 1.0  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 4.0

---

#### BREAKAWAY

Rack travel in mm : -1.00  
Rated speed rpm : 1080  
Tolerance 1/min : ± 5

---

#### STARTING FUEL DELIVERY

Rated speed rpm : 100  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 145.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 10.0  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 14.0

---

#### LOW IDLE

Del. quantity  
cm<sup>3</sup>/1000 strokes : 27.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 2.0

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Check tolerance  
cm<sup>3</sup>/1000S. : ± 5.0  
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

---

End of test specification sheet

# BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 11.09.95  
Test oil : ISO 4113  
Combination No. : 0 402 046 862  
Injection pump  
Pump designation : PES6P120A320RS3337  
EP type number : 0 412 026 770  
Governor  
Governor design. : RQV300...1250PA1149K  
Governor no. : 0 421 815 416

Cust. part No. : CCEP 5141A 66-218

Customer-spec. information  
Customer : RVI  
Motor : MIDR 06-02-26 V4  
Power KW : 133.0

## TEST BENCH REQUIREMENTS

Inlet line : 3.2  
Test oil inlet  
temp. °C : 40  
Tolerance °C : ± 2.0  
Overflow valve : 2 417 413 084  
Inlet press. bar : 2.5  
Test nozzle holder  
assembly : 1 688 901 101  
Opening pressure  
bar : 208.5  
Tolerance bar : ± 1.5  
Test lines : 1 680 750 008  
Outside diameter : 6.0

x inside diameter : 2.0  
x length mm : 600

## REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

## BEGINNING OF DELIVERY

Test pressure bar : 26.0  
Tolerance bar : ± 1.0  
Prestroke mm : 4.10  
Tolerance mm : ± 0.05  
test only : ± 0.10  
Rack travel in mm : 10.50  
Tolerance mm : ± 1.50  
Firing order : 1- 5- 3- 6- 2-  
: 4  
Phasing : 0-60-120-180-240  
: -300  
Tolerance : ± 0.30  
Check  
tolerance °NW : ± 0.50  
Start of delivery mark  
Barrel no. : 1

## BASIC SETTING

Rated speed rpm : 1250  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 149.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 1.0  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 4.0  
Speed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 5.0

---

Check tolerance  
cm<sup>3</sup>/1000S. : 9.0

Del. quantity  
cm<sup>3</sup>/1000 strokes : 30.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  2.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  5.0  
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

(B) SETTING OF INJECTION PUMP  
WITH GOVERNOR

---

GUIDE SLEEVE TRAVEL

Rated speed rpm : 300  
guide sleeve  
travel mm : 1.31  
Tolerance mm :  $\pm$  0.20

Rated speed rpm : 1346  
guide sleeve  
travel mm : 10.55  
Tolerance mm :  $\pm$  0.15

Rated speed rpm : 905  
guide sleeve  
travel mm : 6.54  
Tolerance mm :  $\pm$  0.25

Rated speed rpm : 381  
guide sleeve  
travel mm : 2.38  
Tolerance mm :  $\pm$  0.25

Rated speed rpm : 431  
guide sleeve  
travel mm : 2.98  
Tolerance mm :  $\pm$  0.25

Rated speed rpm : 530  
guide sleeve  
travel mm : 3.77  
Tolerance mm :  $\pm$  0.25

Rated speed rpm : 1580  
guide sleeve  
travel mm : 13.50  
Tolerance mm :  $\pm$  0.50

---

GUIDE SLEEVE POSITION

Rated speed rpm : 1380  
Rack travel in mm : 10.50  
Tolerance mm :  $\pm$  1.30

---

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1250  
Aneroid pressure  
hPa : 1000  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 149.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  1.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  4.0  
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 5.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 9.0

---

RATED SPEED

control lever  
position degree : 297.0  
tolerance degree :  $\pm$  4.0

rack travel mm : -1.00  
Rated speed rpm : 1330  
Tolerance 1/min :  $\pm$  5

rack travel mm : -7.10  
Rated speed rpm : 1410  
Tolerance 1/min :  $\pm$  15

rack travel mm : -10.60  
Tolerance mm :  $\pm$  0.50  
Rated speed rpm : 1550

---

LOW IDLE

control lever  
position degree : 244.0  
tolerance degree :  $\pm$  4.0

Testing:

Rated speed rpm : 300  
rack travel mm : -6.30  
Tolerance mm :  $\pm$  0.20

Rated speed rpm : 200

CRT mm min. : < -5.20

Rated speed rpm : 400

---

#### TORQUE CONTROL

Rated speed rpm : 1250

Rated speed rpm : 850  
rack travel mm : -1.35  
Tolerance mm : +- 0.15

Rated speed rpm : 350  
rack travel mm : -1.80  
Tolerance mm : +- 0.20

---

#### ANEROID/ALTITUDE COMPENSATOR TEST

#### SETTING

Rated speed rpm : 1250  
Pressure hPa : 1000

#### MEASUREMENT

Pressure hPa : -  
Rated speed rpm : 1250  
rack travel mm : -2.00  
Tolerance mm : +- 0.20

Rated speed rpm : 1250

Pressure hPa : 160  
rack travel mm : -1.40  
Tolerance mm : +- 0.10

Pressure hPa : 280  
rack travel mm : -0.35  
Tolerance mm : +- 0.05

---

#### START CUT-OUT

Rated speed rpm : < 240  
Check  
speed 1/min : < 260

---

#### FUEL DELIVERY CHARACTERISTICS

Aneroid pressure  
hPa : 1000  
Rated speed rpm : 850  
Del. quantity  
cm3/1000 strokes : 121.0

Tolerance  
cm3/1000 strokes : +- 3.0  
Check tolerance  
cm3/1000S. : +- 6.0

Aneroid pressure  
hPa : -  
Rated speed rpm : 1250  
Del. quantity  
cm3/1000 strokes : 106.0  
Tolerance  
cm3/1000 strokes : +- 1.0  
Check tolerance  
cm3/1000S. : +- 4.0

---

#### BREAKAWAY

Rack travel in mm : -1.00  
Rated speed rpm : 1330  
Tolerance 1/min : +- 5

---

#### STARTING FUEL DELIVERY

Rated speed rpm : 100  
Del. quantity  
cm3/1000 strokes : 108.0  
Tolerance  
cm3/1000 strokes : +- 15.0  
Check tolerance  
cm3/1000S. : +- 19.0

---

#### LOW IDLE

Del. quantity  
cm3/1000 strokes : 30.0  
Tolerance  
cm3/1000 strokes : +- 2.0  
Check tolerance  
cm3/1000S. : +- 5.0  
Speed  
Tolerance  
cm3/1000 strokes : 8.0  
Check tolerance  
cm3/1000S. : 12.0

---

End of test specification sheet

# BOSCH INJ. PUMP TEST SPECIFICATIONS

## Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 11.09.95  
Test oil : ISO 4113

Combination No. : 0 402 046 872

Injection pump  
Pump designation : PES6P120A320RS3337  
EP type number : 0 412 026 770

Governor  
Governor design. : RQV300...1250PA1246K  
Governor no. : 0 421 815 480

Cust. part No. : CCEP 5155 66-217

## Customer-spec. information

Customer : RVI  
Motor : MIDR 06-02-26 U4  
Power KW : 111.0

## TEST BENCH REQUIREMENTS

Inlet line : 3.2

Test oil inlet  
temp. °C : 40  
Tolerance °C : ± 2.0

Overflow valve : 2 417 413 084

Inlet press. bar : 2.5  
Tolerance bar : ± 0.1

Test nozzle holde  
assembly : 1 638 901 101

Opening pressure  
bar : 208.5  
Tolerance bar : ± 1.5

Test lines : 1 680 750 008

Outside diameter : 6.0

x inside diameter : 2.0  
x length mm : 600

## REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

## BEGINNING OF DELIVERY

Test pressure bar : 26.0  
Tolerance bar : ± 1.0

Prestroke mm : 4.10  
Tolerance mm : ± 0.05

test only : ± 0.10

Rack travel in mm : 11.00  
Tolerance mm : ± 0.50

Firing order : 1- 5- 3- 6- 2-  
: 4

Phasing : 0-60-120-180-240  
: -300

Tolerance : ± 0.30  
Check  
tolerance °NW : ± 0.50

Start of delivery mark

Barrel no. : 1

## BASIC SETTING

Rated speed rpm : 1250

Del. quantity  
cm<sup>3</sup>/1000 strokes : 145.0

Tolerance  
cm<sup>3</sup>/1000 strokes : ± 1.0

Check tolerance  
cm<sup>3</sup>/1000S. : ± 4.0

Speed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 5.0

|  |   |        |
|--|---|--------|
| Check tolerance<br>cm <sup>3</sup> /1000S.           | : | 9.0    |
| Rated speed rpm                                      | : | 300    |
| Rack travel in mm                                    | : | -6.00  |
| Tolerance mm   | : | + 0.20 |
| Del. quantity<br>cm <sup>3</sup> /1000 strokes       | : | 29.0   |
| Tolerance<br>cm <sup>3</sup> /1000 strokes           | : | + 2.0  |
| Check tolerance<br>cm <sup>3</sup> /1000S.           | : | + 5.0  |
| Spread<br>Tolerance<br>cm <sup>3</sup> /1000 strokes | : | 8.0    |
| Check tolerance<br>cm <sup>3</sup> /1000S.           | : | 12.0   |

(B) SETTING OF INJECTION PUMP  
WITH GOVERNOR

GUIDE SLEEVE TRAVEL

|                           |   |        |
|---------------------------|---|--------|
| Rated speed rpm           | : | 300    |
| guide sleeve<br>travel mm | : | 1.31   |
| Tolerance mm              | : | + 0.20 |
| Rated speed rpm           | : | 1333   |
| guide sleeve<br>travel mm | : | 10.40  |
| Tolerance mm              | : | + 0.15 |
| Rated speed rpm           | : | 900    |
| guide sleeve<br>travel mm | : | 6.50   |
| Tolerance mm              | : | + 0.25 |
| Rated speed rpm           | : | 530    |
| guide sleeve<br>travel mm | : | 3.77   |
| Tolerance mm              | : | + 0.25 |
| Rated speed rpm           | : | 1580   |
| guide sleeve<br>travel mm | : | 13.50  |
| Tolerance mm              | : | + 0.50 |

GUIDE SLEEVE POSITION

|                   |   |        |
|-------------------|---|--------|
| Rated speed rpm   | : | 1400   |
| Rack travel in mm | : | 10.50  |
| Tolerance mm      | : | + 1.50 |

FULL LOAD DELIVERY AT FULL LOAD STOP

|  |   |       |
|--|---|-------|
| Rated speed rpm                                      | : | 1250  |
| Aneroid pressure<br>hPa                              | : | -     |
| Del. quantity<br>cm <sup>3</sup> /1000 strokes       | : | 145.0 |
| Tolerance<br>cm <sup>3</sup> /1000 strokes           | : | + 1.0 |
| Check tolerance<br>cm <sup>3</sup> /1000S.           | : | + 4.0 |
| Spread<br>Tolerance<br>cm <sup>3</sup> /1000 strokes | : | 5.0   |
| Check tolerance<br>cm <sup>3</sup> /1000S.           | : | 9.0   |

RATED SPEED

|                                  |   |        |
|----------------------------------|---|--------|
| control lever<br>position degree | : | 296.0  |
| tolerance degree                 | : | + 4.0  |
| rack travel mm                   | : | -1.00  |
| Rated speed rpm                  | : | 1325   |
| Tolerance 1/min                  | : | + 5    |
| rack travel mm                   | : | -6.80  |
| Rated speed rpm                  | : | 1420   |
| Tolerance 1/min                  | : | + 15   |
| rack travel mm                   | : | -10.30 |
| Tolerance mm                     | : | + 0.50 |
| Rated speed rpm                  | : | 1550   |

LOW IDLE

|                                  |   |       |
|----------------------------------|---|-------|
| control lever<br>position degree | : | 242.0 |
| tolerance degree                 | : | + 4.0 |

Testing:

|                 |   |        |
|-----------------|---|--------|
| Rated speed rpm | : | 300    |
| rack travel mm  | : | -6.00  |
| Tolerance mm    | : | + 0.10 |

|                 |   |     |
|-----------------|---|-----|
| Rated speed rpm | : | 200 |
|-----------------|---|-----|

|             |   |         |
|-------------|---|---------|
| CRT mm min. | : | < -5.00 |
|-------------|---|---------|

|                 |   |     |
|-----------------|---|-----|
| Rated speed rpm | : | 380 |
|-----------------|---|-----|



---

#### TORQUE CONTROL

Rated speed rpm : 1250  
Rated speed rpm : 750  
rack travel mm : -1.60  
Tolerance mm :  $\pm$  0.10  
  
Rated speed rpm : 650  
rack travel mm : -1.90  
Tolerance mm :  $\pm$  0.15  
  
Rated speed rpm : 400  
rack travel mm : -2.50  
Tolerance mm :  $\pm$  0.20

---

#### START CUT-OUT

Rated speed rpm : < 225  
Check  
speed 1/min : < 245

---

#### FUEL DELIVERY CHARACTERISTICS

Aneroid pressure  
hPa : -  
Rated speed rpm : 750  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 107.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  3.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  6.0

Aneroid pressure  
hPa : -  
Rated speed rpm : 650  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 94.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  3.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  6.0

---

#### BREAKAWAY

Rack travel in mm : -1.00  
Rated speed rpm : 1325  
Tolerance 1/min :  $\pm$  5

---

#### STARTING FUEL DELIVERY

Rated speed rpm : 100  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 112.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  15.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  19.0

---

#### LOW IDLE

Rated speed rpm : 300  
rack travel mm : -6.00  
Tolerance mm :  $\pm$  0.20  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 29.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  2.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  5.0  
Speed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

---

End of test specification sheet

# BOSCH INJ. PUMP TEST SPECIFICATIONS

## Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 07.09.95  
Test oil : ISO 4113  
Combination No. : 0 402 066 706  
Injection pump  
Pump designation : PES6P120A12ORS3358  
EP type number : 0 412 026 784  
Governor  
Governor design. : RSV475...1250P2A613  
Governor no. : 0 421 833 505  
Cust. part No. : 3927357

Customer-spec. information  
Customer : CDC  
Motor : 6BTA-590 ELITE  
Power KW : 138.0

## TEST BENCH REQUIREMENTS

Inlet line : 3.2  
Test oil inlet  
temp. °C : 40  
Tolerance °C : ± 2.0  
Overflow valve : 2 417 413 086  
Inlet press. bar : 1.5  
Test nozzle holde  
assembly : 1 688 901 103  
Opening pressure  
bar : 208.5  
Tolerance bar : ± 1.5  
Test lines : 1 680 750 089  
Outside diameter : 8.0

x inside diameter : 3.0  
x length mm : 600

## REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

## BEGINNING OF DELIVERY

Test pressure bar : 26.0  
Tolerance bar : ± 1.0

Prestroke mm : 2.85  
Tolerance mm : ± 0.05

test only : ± 0.10

Rack travel in mm : 10.50  
Tolerance mm : ± 1.50

Firing order : 1- 5- 3- 6- 2-  
: 4

Phasing : 0-60-120-180-240  
: -300

Tolerance : ± 0.30  
Check  
tolerance °NW : ± 0.50

Start of delivery blocking

\*NW after s.o.d. : 6.75  
Tolerance : ± 0.50  
Check  
tolerance °NW : ± 0.75

Barrel no. : 1

## BASIC SETTING

Rated speed rpm : 1250

Rack travel in mm : 10.80  
Tolerance mm : ± 0.05

Del. quantity  
cm<sup>3</sup>/1000 strokes : 150.0

|                   |          |
|-------------------|----------|
| Tolerance         |          |
| cm3/1000 strokes  | : ± 1.0  |
| Check tolerance   |          |
| cm3/1000S.        | : ± 3.0  |
| Speed             |          |
| Tolerance         |          |
| cm3/1000 strokes  | : 4.0    |
| Check tolerance   |          |
| cm3/1000S.        | : 7.5    |
| Rated speed rpm   | : 475    |
| Rack travel in mm | : 5.60   |
| Tolerance mm      | : ± 0.30 |
| Del. quantity     |          |
| cm3/1000 strokes  | : 21.0   |
| Tolerance         |          |
| cm3/1000 strokes  | : ± 2.0  |
| Check tolerance   |          |
| cm3/1000S.        | : ± 4.5  |
| Speed             |          |
| Tolerance         |          |
| cm3/1000 strokes  | : 6.0    |
| Check tolerance   |          |
| cm3/1000S.        | : 9.0    |

#### (B) SETTING OF INJECTION PUMP WITH GOVERNOR

##### GUIDE SLEEVE POSITION

|                   |          |
|-------------------|----------|
| Rated speed rpm   | : 800    |
| Rack travel in mm | : 0.50   |
| Tolerance mm      | : ± 0.20 |

|   |        |
|---|--------|
| governor spring<br>pre-tension<br>click setting x | : 4.75 |
|---|--------|

##### FULL LOAD DELIVERY AT FULL LOAD STOP

|                         |         |
|-------------------------|---------|
| Rated speed rpm         | : 1250  |
| Aneroid pressure<br>hPa | : 1500  |
| Del. quantity           |         |
| cm3/1000 strokes        | : 150.0 |
| Tolerance               |         |
| cm3/1000 strokes        | : ± 1.0 |
| Check tolerance         |         |
| cm3/1000S.              | : ± 3.0 |
| Speed                   |         |

|                  |       |
|------------------|-------|
| Tolerance        |       |
| cm3/1000 strokes | : 4.0 |
| Check tolerance  |       |
| cm3/1000S.       | : 7.5 |

##### RATED SPEED

|                                  |          |
|----------------------------------|----------|
| control lever<br>position degree | : 110.0  |
| tolerance degree                 | : ± 4.0  |
| rack travel mm                   | : 9.80   |
| Rated speed rpm                  | : 1295   |
| Tolerance 1/min                  | : ± 5    |
| rack travel mm                   | : 4.00   |
| Rated speed rpm                  | : 1390   |
| Tolerance 1/min                  | : ± 15   |
| rack travel mm                   | : 0.85   |
| Tolerance mm                     | : ± 0.55 |
| Rated speed rpm                  | : 1500   |

##### LOW IDLE

|                                  |         |
|----------------------------------|---------|
| control lever<br>position degree | : 87.0  |
| tolerance degree                 | : ± 4.0 |

##### Testing:

|                 |          |
|-----------------|----------|
| Rated speed rpm | : 475    |
| rack travel mm  | : 5.60   |
| Tolerance mm    | : ± 0.10 |
| rack travel mm  | : 2.00   |
| Rated speed rpm | : 570    |
| Tolerance 1/min | : ± 30   |

##### TORQUE CONTROL

|                 |          |
|-----------------|----------|
| Rated speed rpm | : 1250   |
| rack travel mm  | : 10.80  |
| Tolerance mm    | : ± 0.05 |
| Rated speed rpm | : 750    |
| rack travel mm  | : 10.80  |
| Tolerance mm    | : ± 0.10 |

##### ANEROID/ALTITUDE COMPENSATOR TEST

##### SETTING

Rated speed rpm : 500  
Pressure hPa : 1500  
rack travel mm : 10.80  
Tolerance mm :  $\pm$  0.05

#### MEASUREMENT

Pressure hPa : -  
Rated speed rpm : 500  
rack travel mm : 8.60  
Tolerance mm :  $\pm$  0.20

Rated speed rpm : 500

Pressure hPa : 900  
rack travel mm : 10.20  
Tolerance mm :  $\pm$  0.20

Pressure hPa : 600  
rack travel mm : 9.15  
Tolerance mm :  $\pm$  0.05

#### FUEL DELIVERY CHARACTERISTICS

Aneroid pressure  
hPa : 1500  
Rated speed rpm : 750  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 151.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  2.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  4.0  
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

Aneroid pressure  
hPa : -  
Rated speed rpm : 500  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 110.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  2.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  4.0

#### BREAKAWAY

Rack travel in mm : 9.80  
Rated speed rpm : 1295  
Tolerance 1/min :  $\pm$  5

#### STARTING FUEL DELIVERY

Rated speed rpm : 100  
rack travel mm : 20.25  
Tolerance mm :  $\pm$  0.75  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 100.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  20.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  25.0

#### LOW IDLE

Rated speed rpm : 475  
rack travel mm : 5.60  
Tolerance mm :  $\pm$  0.30  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 21.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  2.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  4.5  
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 6.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 9.0

End of test specification sheet

# BOSCH INJ. PUMP TEST SPECIFICATIONS

## Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 21.07.95

Test oil : ISO 4113

Combination No. : 0 402 076 751

## Injection pump

Pump designation : PES6P120A720RS3311

EP type number : 0 412 026 760

## Governor

Governer design. : RSV400...1050POA603

Governer no. : 0 421 833 484

Cust. part No. :

## Customer-spec. information

Customer : FNH-GEOTECH

Motor : P396

Power KW : 157.0

## TEST BENCH REQUIREMENTS

Inlet line : 4.2

## Test oil inlet

temp. °C : 40

Tolerance °C : ± 2.0

Overflow valve : 2 417 413 086

Inlet press. bar : 1.5

Tolerance bar : ± 0.1

## Overflow quantity

min. L/h : 100

Tolerance L/h : ± 20.0

## Test nozzle holde

assembly : 1 688 901 103

## Opening pressure

bar : 208.5

Tolerance bar : ± 1.5

Test Lines : 1 680 750 089

Outside diameter : 8.0

x inside diameter : 3.0

x length mm : 600

## REMARKS

## (A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values \_\_\_\_\_

## BEGINNING OF DELIVERY

Test pressure bar : 26.0

Tolerance bar : ± 1.0

Prestroke mm : 3.60

Tolerance mm : ± 0.05

test only : ± 0.10

Rack travel in mm : 10.50

Tolerance mm : ± 1.50

Firing order : 1- 5- 3- 6- 2-  
: 4

Phasing : 0-60-120-180-240

: -300

Tolerance : ± 0.30

## Check

tolerance °NW : ± 0.75

## Start of delivery mark

Barrel no. : 1

## BASIC SETTING

Rated speed rpm : 1050

Rack travel in mm : 10.35

Tolerance mm : ± 0.05

## Del. quantity

cm<sup>3</sup>/1000 strokes : 132.0

Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  1.0

Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  4.0

Speed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 5.0

Check tolerance  
cm<sup>3</sup>/1000S. : 9.0

Rated speed rpm : 400

Rack travel in mm : 5.00  
Tolerance mm :  $\pm$  0.20

Del. quantity  
cm<sup>3</sup>/1000 strokes : 18.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  3.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  6.0

Speed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

#### (B) SETTING OF INJECTION PUMP WITH GOVERNOR

##### GUIDE SLEEVE POSITION

Rated speed rpm : 800

Rack travel in mm : 0.50  
Tolerance mm :  $\pm$  0.20

governor spring  
pre-tension  
click setting x : 5.00

##### FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1050  
Aneroid pressure  
hPa : 1500  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 132.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  1.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  4.0  
Speed

Tolerance  
cm<sup>3</sup>/1000 strokes : 5.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 9.0

##### RATED SPEED

control lever  
position degree : 101.0  
tolerance degree :  $\pm$  4.0

rack travel mm : 0.85  
Tolerance mm :  $\pm$  0.55  
Rated speed rpm : 1320

rack travel mm : 4.00  
Rated speed rpm : 1160

##### LOW IDLE

control lever  
position degree : 79.0  
tolerance degree :  $\pm$  4.0

Setting point w/out bumper spring

Rated speed rpm : 400  
rack travel mm : 5.00

##### Testing:

Rated speed rpm : 400  
rack travel mm : 4.50  
Tolerance mm :  $\pm$  0.10

rack travel mm : 2.00  
Rated speed rpm : 530  
Tolerance 1/min :  $\pm$  20

##### TORQUE CONTROL

Rated speed rpm : 1050  
rack travel mm : 10.35  
Tolerance mm :  $\pm$  0.05

Rated speed rpm : 750  
rack travel mm : 11.20  
Tolerance mm :  $\pm$  0.10

Rated speed rpm : 910  
rack travel mm : 11.00  
Tolerance mm :  $\pm$  0.10

---

ANEROID/ALTITUDE  
COMPENSATOR TEST

SETTING

Rated speed rpm : 500  
Pressure hPa : 1500  
rack travel mm : 11.20  
Tolerance mm :  $\pm 0.10$

MEASUREMENT

Pressure hPa : -  
Rated speed rpm : 500  
rack travel mm : 9.00  
Tolerance mm :  $\pm 0.10$

Rated speed rpm : 500  
  
Pressure hPa : 900  
rack travel mm : 10.85  
Tolerance mm :  $\pm 0.05$

---

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure  
hPa : 1500  
Rated speed rpm : 750  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 163.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm 3.0$   
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm 6.0$

Aneroid pressure  
hPa : -  
Rated speed rpm : 500  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 115.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm 1.0$   
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm 4.0$

---

STARTING FUEL DELIVERY

Rated speed rpm : 100  
rack travel mm : 20.50  
Tolerance mm :  $\pm 0.50$   
Del. quantity  
cm<sup>3</sup>/1000 strokes : 190.0

Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm 15.0$   
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm 19.0$

---

LOW IDLE

Rated speed rpm : 400  
rack travel mm : 5.00  
Tolerance mm :  $\pm 0.20$   
Del. quantity  
cm<sup>3</sup>/1000 strokes : 18.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm 3.0$   
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm 6.0$   
Speed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

---

End of test specification sheet

# BOSCH INJ. PUMP TEST SPECIFICATIONS

## Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 13.09.95  
Test oil : ISO 4113

Combination No. : 0 402 616 800

Injection pump  
Pump designation : PE6P130A700RS7234  
EP type number : 0 412 636 819

Governor  
Governor design. :  
Governor no. :

Cust. part No. : 865277-P02

Customer-spec. information  
Customer : PENTA  
Motor : TAMD 162 \*

## TEST BENCH REQUIREMENTS

Inlet line : 4.2

Test oil inlet  
temp. °C : 40  
Tolerance °C : ± 2.0

Overflow valve : 1 417 413 025

Inlet press. bar : 1.5  
Tolerance bar : ± 0.1

Test nozzle holder  
assembly : 1 688 901 019

Opening pressure  
bar : 208.5  
Tolerance bar : ± 1.5

Test lines : 1 680 750 075

Outside diameter : 8.0

x inside diameter : 3.0  
x length mm : 1000

## REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

## BEGINNING OF DELIVERY

Test pressure bar : 26.0  
Tolerance bar : ± 1.0

Prestroke mm : 3.65  
Tolerance mm : ± 0.05

test only : ± 0.10

Rack travel in mm : 10.50  
Tolerance mm : ± 1.50

Firing order : 1- 5- 3- 6- 2-  
: 4

Phasing : 0-60-120-180-240  
: -300  
Tolerance : ± 0.30  
Check  
tolerance °NW : ± 0.75

Start of delivery mark

Barrel no. : 1

## BASIC SETTING

Rated speed rpm : 700

Rack travel in mm : 11.15  
Tolerance mm : ± 0.05

Del. quantity  
cm<sup>3</sup>/1000 strokes : 336.0

Tolerance  
cm<sup>3</sup>/1000 strokes : ± 1.5

Check tolerance  
cm<sup>3</sup>/1000S. : ± 5.0



---

Speed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 6.0

---

Check tolerance  
cm<sup>3</sup>/1000S. : 10.0

Rated speed rpm : 300

Rack travel in mm : 3.85

Tolerance mm :  $\pm$  0.20

Del. quantity  
cm<sup>3</sup>/1000 strokes : 23.0

Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  3.0

Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  6.0

Speed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 5.0

Check tolerance  
cm<sup>3</sup>/1000S. : 8.0

(B) SETTING OF INJECTION PUMP  
WITH GOVERNOR

---

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 700

Aneroid pressure  
hPa : -

Del. quantity  
cm<sup>3</sup>/1000 strokes : 336.0

Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  1.5

Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  5.0

---

LOW IDLE

Rated speed rpm : 300

rack travel mm : 3.85

Tolerance mm :  $\pm$  0.20

Del. quantity  
cm<sup>3</sup>/1000 strokes : 23.0

Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  3.0

Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  6.0

---

End of test specification sheet

# BOSCH INJ. PUMP TEST SPECIFICATIONS

## Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 18.07.95  
Test oil : ISO 4113  
Combination No. : 0 402 616 806  
Injection pump  
Pump designation : PE6P120A300LS7888  
EP type number : 0 412 626 947  
Governor  
Governor design. :  
Governor no. :

Cust. part No. : 04221425KZ0165-17

Customer-spec. information  
Customer : KHD  
Motor : BF6M1015C  
Power kW : 300.0

## TEST BENCH REQUIREMENTS

Inlet line : 3.1  
Test oil inlet  
temp. °C : 40  
Tolerance °C : ± 2.0  
Overflow valve : 1 417 413 025  
Inlet press. bar : 1.5  
Tolerance bar : ± 0.1  
Test nozzle holde  
assembly : 1 688 901 105  
Opening pressure  
bar : 208.5  
Tolerance bar : ± 1.5  
Test lines : 1 680 750 075  
Outside diameter : 8.0

x inside diameter : 3.0  
x length mm : 1000

## REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

## BEGINNING OF DELIVERY

Test pressure bar : 26.0  
Tolerance bar : ± 1.0  
Prestroke mm : 4.05  
Tolerance mm : ± 0.05  
test only : ± 0.10  
Rack travel in mm : 10.50  
Tolerance mm : ± 0.50  
Firing order : 1- 6- 3- 5- 2-  
: 4  
Phasing : 0-60-120-180-240  
: -300  
Tolerance : ± 0.30  
Check  
tolerance °NW : ± 0.50  
Start of delivery mark  
Barrel no. : 1

## BASIC SETTING

Rated speed rpm : 950  
Rack travel in mm : 13.70  
Tolerance mm : ± 0.05  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 350.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 1.0  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 4.0

---

Speed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 6.0

---

Check tolerance  
cm<sup>3</sup>/1000S. : 9.0

Rated speed rpm : 300

Rack travel in mm : 4.70  
Tolerance mm :  $\pm$  0.20

Del. quantity  
cm<sup>3</sup>/1000 strokes : 25.0

Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  3.0

Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  6.0

Speed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0

Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

(B) SETTING OF INJECTION PUMP  
WITH GOVERNOR

---

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 950  
Aneroid pressure  
hPa : -

Del. quantity  
cm<sup>3</sup>/1000 strokes : 350.0

Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  1.0

Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  4.0

Speed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 6.0

Check tolerance  
cm<sup>3</sup>/1000S. : 9.0

---

TORQUE CONTROL

Rated speed rpm : 950  
rack travel mm : 13.70  
Tolerance mm :  $\pm$  0.05

---

STARTING FUEL DELIVERY

Rated speed rpm : 100  
rack travel mm : 21.00

Del. quantity  
cm<sup>3</sup>/1000 strokes : 200.0

Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  20.0

Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  24.0

---

LOW IDLE

Rated speed rpm : 300  
rack travel mm : 4.70

Tolerance mm :  $\pm$  0.20  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 25.0

Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  3.0

Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  6.0

Speed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0

Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

---

End of test specification sheet

# BOSCH INJ. PUMP TEST SPECIFICATIONS

## Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 13.09.95

Test oil : ISO 4113

Combination No. : 0 402 646 610

## Injection pump

Pump designation : PE6P130A720RS7273

: -10

EP type number : 0 412 636 828

## Governor

Governer design. : RQV250...900P4881-2

Governer no. : 0 421 814 035

Cust. part No. : 865567

: -P04 21.11.94

## Customer-spec. information

Customer : PENTA

Motor : TAD 1630 P

## TEST BENCH REQUIREMENTS

Inlet line : 4.2

Vibration  
damper

(RoBo diaphragm) : 3.1

Test oil inlet

temp. °C : 40

Tolerance °C : ± 2.0

Overflow valve : 1 457 413 010

Inlet press. bar : 1.5

Tolerance bar : ± 0.1

Test nozzle holde  
assembly

: 1 688 901 105

Opening pressure  
bar

: 208.5

Tolerance bar : ± 1.5

Test lines : 1 680 750 089

Outside diameter : 8.0

x inside diameter : 3.0

x length mm : 600

## REMARKS

## (A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values \_\_\_\_\_

## BEGINNING OF DELIVERY

Test pressure bar : 26.0

Tolerance bar : ± 1.0

Prestroke mm : 4.55

Tolerance mm : ± 0.05

test only : ± 0.10

Rack travel in mm : 9.30

Tolerance mm : ± 0.50

Firing order : 1- 5- 3- 6- 2-  
: 4

Phasing : 0-60-120-180-240  
: -300

Tolerance : ± 0.30

Check  
tolerance °NW : ± 0.75

Start of delivery mark

Barrel no. : 1

## BASIC SETTING

Rated speed rpm : 700

Rack travel in mm : 13.00

Tolerance mm : ± 0.05

Del. quantity

cm<sup>3</sup>/1000 strokes : 415.0

---

Tolerance  
cm<sup>3</sup>/1000 strokes : + 1.5

---

Check tolerance  
cm<sup>3</sup>/1000S. : + 5.0

---

Spread  
Tolerance  
cm<sup>3</sup>/1000 strokes : 7.0

---

Check tolerance  
cm<sup>3</sup>/1000S. : 11.0

---

Del. quantity  
cm<sup>3</sup>/1000 strokes : 20.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : + 3.0  
Check tolerance  
cm<sup>3</sup>/1000S. : + 6.0  
Spread  
Tolerance  
cm<sup>3</sup>/1000 strokes : 7.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 11.0

---

(B) SETTING OF INJECTION PUMP  
WITH GOVERNOR

---

GUIDE SLEEVE TRAVEL

Rated speed rpm : 250  
guide sleeve  
travel mm : 1.12  
Tolerance mm : + 0.25

Rated speed rpm : 979  
guide sleeve  
travel mm : 8.54  
Tolerance mm : + 0.25

Rated speed rpm : 315  
guide sleeve  
travel mm : 1.98  
Tolerance mm : + 0.25

Rated speed rpm : 365  
guide sleeve  
travel mm : 2.47  
Tolerance mm : + 0.25

Rated speed rpm : 660  
guide sleeve  
travel mm : 4.49  
Tolerance mm : + 0.25

Rated speed rpm : 1160

guide sleeve  
travel mm : 11.50  
Tolerance mm : + 0.50

---

GUIDE SLEEVE POSITION

Rated speed rpm : 1030

Rack travel in mm : 11.00  
Tolerance mm : + 2.00

---

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 700  
Aneroid pressure  
hPa : 1600  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 415.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : + 1.5  
Check tolerance  
cm<sup>3</sup>/1000S. : + 5.0  
Spread  
Tolerance  
cm<sup>3</sup>/1000 strokes : 7.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 11.0

---

RATED SPEED

control lever  
position degree : 66.0  
tolerance degree : + 4.0

control lever  
position degree : 122.0  
tolerance degree : + 4.0

rack travel mm : 12.00  
Rated speed rpm : 965  
Tolerance 1/min : + 5

rack travel mm : 4.00  
Rated speed rpm : 1040  
Tolerance 1/min : + 15

rack travel mm : 0.50  
Tolerance mm : + 0.50  
Rated speed rpm : 1180

---

LOW IDLE

control lever  
position degree : 68.0

tolerance degree : +- 4.0

control lever

position degree : 15.0

tolerance degree : +- 4.0

#### Testing:

Rated speed rpm : 250

rack travel mm : 4.70

Tolerance mm : +- 0.20

Rated speed rpm : 150

CRT mm min. : > 6.00

Rated speed rpm : 335

---

#### TORQUE CONTROL

Rated speed rpm : 700

rack travel mm : 13.00

Tolerance mm : +- 0.05

---

#### ANEROID/ALTITUDE COMPENSATOR TEST

##### SETTING

Rated speed rpm : 500

Pressure hPa : 1600

rack travel mm : 13.00

Tolerance mm : +- 0.05

##### MEASUREMENT

Pressure hPa : -

Rated speed rpm : 500

rack travel mm : 9.15

Tolerance mm : +- 0.10

Rated speed rpm : 500

Pressure hPa : 1100

rack travel mm : 3.35

Tolerance mm : +- 0.15

Pressure hPa : 550

rack travel mm : 0.25

Tolerance mm : +- 0.05

---

#### FUEL DELIVERY CHARACTERISTICS

Aneroid pressure  
hPa : -

CO2

Rated speed rpm : 700

Del. quantity  
cm3/1000 strokes : 257.0

Tolerance  
cm3/1000 strokes : +- 1.5

Check tolerance  
cm3/1000S. : +- 5.0

---

#### BREAKAWAY

Rack travel in mm : 12.00

Rated speed rpm : 965

Tolerance 1/min : +- 5

---

#### STARTING FUEL DELIVERY

Rated speed rpm : 100

rack travel mm : 15.00

Tolerance mm : +- 0.50

---

#### LOW IDLE

Del. quantity  
cm3/1000 strokes : 20.0

Tolerance  
cm3/1000 strokes : +- 3.0

Check tolerance  
cm3/1000S. : +- 6.0

Speed  
Tolerance  
cm3/1000 strokes : 7.0

Check tolerance  
cm3/1000S. : 11.0

---

End of test specification sheet

# BOSCH INJ. PUMP TEST SPECIFICATIONS

## Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 13.09.95  
Test oil : ISO 4113

Combination No. : 0 402 646 658

Injection pump  
Pump designation : PE6P130A720RS7371  
EP type number : 0 412 636 837

Governor  
Governor design. : RQV250...900PA1215  
Governor no. : 0 421 814 139

Cust. part No. : 3825482-PO2 V.02/95

Customer-spec. information  
Customer : PENTA  
Motor : TAMD 163 A  
Power kW : 405.0

## TEST BENCH REQUIREMENTS

Inlet Line : 4.2

Vibration  
damper  
(RoBo diaphragm) : 3.1

Test oil inlet  
temp. °C : 40  
Tolerance °C : ± 2.0

Overflow valve : 2 417 413 077

Inlet press. bar : 1.5  
Tolerance bar : ± 0.1

Overflow quantity  
min. l/h : 60  
Tolerance l/h : ± 10.0

Test nozzle holder  
assembly : 1 688 901 105

Opening pressure  
bar : 208.5  
Tolerance bar : ± 1.5

Test lines : 1 680 750 089

Outside diameter : 8.0

x inside diameter : 3.0  
x length mm : 600

## REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

## BEGINNING OF DELIVERY

Test pressure bar : 26.0  
Tolerance bar : ± 1.0

Prestroke mm : 3.70  
Tolerance mm : ± 0.05

test only : ± 0.10

Rack travel in mm : 7.40  
Tolerance mm : ± 0.50

Firing order : 1- 5- 3- 6- 2-  
: 4

Phasing : 0-60-120-180-240  
: -300

Tolerance : ± 0.30  
Check  
tolerance °NW : ± 0.50

Start of delivery mark

Barrel no. : 1

## BASIC SETTING

Rated speed rpm : 900

Rack travel in mm : 12.70  
Tolerance mm : ± 0.05

|                     |        |
|---------------------|--------|
| <hr/>               |        |
| Del. quantity       |        |
| cm3/1000 strokes :  | 363.0  |
| <hr/>               |        |
| Tolerance           |        |
| cm3/1000 strokes :  | + 1.5  |
| <hr/>               |        |
| Check tolerance     |        |
| cm3/1000S. :        | + 5.0  |
| <hr/>               |        |
| Spreed              |        |
| Tolerance           |        |
| cm3/1000 strokes :  | 9.0    |
| <hr/>               |        |
| Check tolerance     |        |
| cm3/1000S. :        | 12.0   |
| <hr/>               |        |
| Rated speed rpm :   | 250    |
| <hr/>               |        |
| Rack travel in mm : | 5.00   |
| Tolerance mm :      | + 0.30 |
| Del. quantity       |        |
| cm3/1000 strokes :  | 25.0   |
| Tolerance           |        |
| cm3/1000 strokes :  | + 3.0  |
| Check tolerance     |        |
| cm3/1000S. :        | + 6.0  |
| Spreed              |        |
| Tolerance           |        |
| cm3/1000 strokes :  | 5.0    |
| Check tolerance     |        |
| cm3/1000S. :        | 8.0    |

(B) SETTING OF INJECTION PUMP  
WITH GOVERNOR

GUIDE SLEEVE TRAVEL

|                   |        |
|-------------------|--------|
| Rated speed rpm : | 250    |
| guide sleeve      |        |
| travel mm :       | 1.12   |
| Tolerance mm :    | + 0.25 |
| <hr/>             |        |
| Rated speed rpm : | 959    |
| guide sleeve      |        |
| travel mm :       | 8.22   |
| Tolerance mm :    | + 0.25 |
| <hr/>             |        |
| Rated speed rpm : | 315    |
| guide sleeve      |        |
| travel mm :       | 1.98   |
| Tolerance mm :    | + 0.25 |
| <hr/>             |        |
| Rated speed rpm : | 365    |
| guide sleeve      |        |
| travel mm :       | 2.47   |
| Tolerance mm :    | + 0.25 |

|                   |        |
|-------------------|--------|
| Rated speed rpm : | 650    |
| guide sleeve      |        |
| travel mm :       | 4.40   |
| Tolerance mm :    | + 0.25 |

|                   |        |
|-------------------|--------|
| Rated speed rpm : | 1160   |
| guide sleeve      |        |
| travel mm :       | 11.50  |
| Tolerance mm :    | + 0.50 |

GUIDE SLEEVE POSITION

|                     |        |
|---------------------|--------|
| Rated speed rpm :   | 1030   |
| Rack travel in mm : | 11.00  |
| Tolerance mm :      | + 2.00 |

FULL LOAD DELIVERY AT FULL LOAD STOP

|                    |       |
|--------------------|-------|
| Rated speed rpm :  | 900   |
| Aneroid pressure   |       |
| hPa :              | 1500  |
| Del. quantity      |       |
| cm3/1000 strokes : | 363.0 |
| Tolerance          |       |
| cm3/1000 strokes : | + 1.5 |
| Check tolerance    |       |
| cm3/1000S. :       | + 5.0 |
| Spreed             |       |
| Tolerance          |       |
| cm3/1000 strokes : | 9.0   |
| Check tolerance    |       |
| cm3/1000S. :       | 12.0  |

RATED SPEED

|                    |        |
|--------------------|--------|
| control lever      |        |
| position degree :  | 63.0   |
| tolerance degree : | + 4.0  |
| <hr/>              |        |
| control lever      |        |
| position degree :  | 118.0  |
| tolerance degree : | + 4.0  |
| <hr/>              |        |
| rack travel mm :   | 11.70  |
| Rated speed rpm :  | 930    |
| Tolerance 1/min :  | + 5    |
| <hr/>              |        |
| rack travel mm :   | 4.00   |
| Rated speed rpm :  | 1010   |
| Tolerance 1/min :  | + 15   |
| <hr/>              |        |
| rack travel mm :   | 0.50   |
| Tolerance mm :     | + 0.50 |
| Rated speed rpm :  | 1100   |



---

## LOW IDLE

control lever  
position degree : 71.0  
tolerance degree :  $\pm$  4.0

control lever  
position degree : 15.0  
tolerance degree :  $\pm$  4.0

### Testing:

Rated speed rpm : 250  
rack travel mm : 5.00  
Tolerance mm :  $\pm$  0.30

Rated speed rpm : 150

CRT mm min. :  $>$  6.50

Rated speed rpm : 350

---

## TORQUE CONTROL

Rated speed rpm : 900  
rack travel mm : 12.70  
Tolerance mm :  $\pm$  0.05

Rated speed rpm : 700  
rack travel mm : 12.70  
Tolerance mm :  $\pm$  0.10

---

## ANEROID/ALTITUDE COMPENSATOR TEST

### SETTING

Rated speed rpm : 500  
Pressure hPa : 1500  
rack travel mm : 12.70  
Tolerance mm :  $\pm$  0.05

### MEASUREMENT

Pressure hPa : -  
Rated speed rpm : 500  
rack travel mm : 7.40  
Tolerance mm :  $\pm$  0.20

Rated speed rpm : 500

Pressure hPa : 1000  
rack travel mm : 4.80  
Tolerance mm :  $\pm$  0.20

C05

Pressure hPa : 240  
rack travel mm : 0.25  
Tolerance mm :  $\pm$  0.05

---

## FUEL DELIVERY CHARACTERISTICS

Aneroid pressure  
hPa : 1500  
Rated speed rpm : 700  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 392.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  3.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  6.0

Aneroid pressure  
hPa : -  
Rated speed rpm : 700  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 190.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  1.5  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  5.0

---

## BREAKAWAY

Rack travel in mm : 11.70  
Rated speed rpm : 930  
Tolerance 1/min :  $\pm$  5

---

## LOW IDLE

Rated speed rpm : 250  
rack travel mm : 5.00  
Tolerance mm :  $\pm$  0.30  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 25.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  3.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  6.0  
Speed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 5.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 8.0

---

End of test specification sheet

# BOSCH INJ. PUMP TEST SPECIFICATIONS

## Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 21.09.95  
Test oil : ISO 4113

Combination No. : 0 402 646 664

Injection pump  
Pump designation : PE6P120A320LS7401  
EP type number : 0 412 626 950

Governor  
Governor design. : RQV325...1000PA1256k  
Governor no. : 0 421 815 493

Cust. part No. :

Customer-spec. information  
Customer : LIAZ  
Motor : ML636E  
Power KW : 175.0

## TEST BENCH REQUIREMENTS

Inlet line : 3.1

Test oil inlet  
temp. °C : 40  
Tolerance °C : ± 2.0

Overflow valve : 1 417 413 025

Inlet press. bar : 1.5  
Tolerance bar : ± 0.1

Test nozzle holde  
assembly : 1 688 901 105

Opening pressure  
bar : 208.5  
Tolerance bar : ± 1.5

Test lines : 1 680 750 089

Outside diameter : 8.0

x inside diameter : 3.0  
x length mm : 600

## REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

## BEGINNING OF DELIVERY

Test pressure bar : 26.0  
Tolerance bar : ± 1.0

Prestroke mm : 5.80  
Tolerance mm : ± 0.05

test only : ± 0.10

Rack travel in mm : 12.00  
Tolerance mm : ± 0.50

Firing order : 1- 5- 3- 6- 2-  
: 4

Phasing : 0-60-120-180-240  
: -300  
Tolerance : ± 0.30  
Check  
tolerance °NW : ± 0.50

## BASIC SETTING

Rated speed rpm : 1000

Rack travel in mm : 13.80  
Tolerance mm : ± 0.05

Del. quantity  
cm<sup>3</sup>/1000 strokes : 215.0

Tolerance  
cm<sup>3</sup>/1000 strokes : ± 1.0

Check tolerance  
cm<sup>3</sup>/1000s. : ± 4.0

Speed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 5.0

|  |   |        |
|--|---|--------|
| Check tolerance<br>cm <sup>3</sup> /1000S.           | : | 9.0    |
| Rated speed rpm                                      | : | 325    |
| Rack travel in mm                                    | : | 4.40   |
| Tolerance mm   | : | + 0.30 |
| Del. quantity<br>cm <sup>3</sup> /1000 strokes       | : | 38.0   |
| Tolerance<br>cm <sup>3</sup> /1000 strokes           | : | + 3.0  |
| Check tolerance<br>cm <sup>3</sup> /1000S.           | : | + 6.0  |
| Spread<br>Tolerance<br>cm <sup>3</sup> /1000 strokes | : | 8.0    |
| Check tolerance<br>cm <sup>3</sup> /1000S.           | : | 12.0   |

(B) SETTING OF INJECTION PUMP  
WITH GOVERNOR

GUIDE SLEEVE TRAVEL

|                           |   |        |
|---------------------------|---|--------|
| Rated speed rpm           | : | 325    |
| guide sleeve<br>travel mm | : | 1.47   |
| Tolerance mm              | : | + 0.20 |
| Rated speed rpm           | : | 1057   |
| guide sleeve<br>travel mm | : | 9.78   |
| Tolerance mm              | : | + 0.15 |
| Rated speed rpm           | : | 831    |
| guide sleeve<br>travel mm | : | 6.95   |
| Tolerance mm              | : | + 0.25 |
| Rated speed rpm           | : | 550    |
| guide sleeve<br>travel mm | : | 3.76   |
| Tolerance mm              | : | + 0.25 |
| Rated speed rpm           | : | 1290   |
| guide sleeve<br>travel mm | : | 13.50  |
| Tolerance mm              | : | + 0.50 |

GUIDE SLEEVE POSITION

|                   |   |        |
|-------------------|---|--------|
| Rated speed rpm   | : | 1140   |
| Rack travel in mm | : | 12.80  |
| Tolerance mm      | : | + 1.30 |

FULL LOAD DELIVERY AT FULL LOAD STOP

|  |   |       |
|--|---|-------|
| Rated speed rpm                                      | : | 1000  |
| Aneroid pressure<br>hPa                              | : | 1500  |
| Del. quantity<br>cm <sup>3</sup> /1000 strokes       | : | 215.0 |
| Tolerance<br>cm <sup>3</sup> /1000 strokes           | : | + 1.0 |
| Check tolerance<br>cm <sup>3</sup> /1000S.           | : | + 4.0 |
| Spread<br>Tolerance<br>cm <sup>3</sup> /1000 strokes | : | 5.0   |
| Check tolerance<br>cm <sup>3</sup> /1000S.           | : | 9.0   |

RATED SPEED

|                                  |   |        |
|----------------------------------|---|--------|
| control lever<br>position degree | : | 65.0   |
| tolerance degree                 | : | + 4.0  |
| control lever<br>position degree | : | 119.0  |
| tolerance degree                 | : | + 4.0  |
| rack travel mm                   | : | 12.80  |
| Rated speed rpm                  | : | 1045   |
| Tolerance 1/min                  | : | + 5    |
| rack travel mm                   | : | 4.00   |
| Rated speed rpm                  | : | 1145   |
| Tolerance 1/min                  | : | + 15   |
| rack travel mm                   | : | 0.50   |
| Tolerance mm                     | : | + 0.50 |
| Rated speed rpm                  | : | 1200   |

LOW IDLE

|                                  |   |       |
|----------------------------------|---|-------|
| control lever<br>position degree | : | 69.0  |
| tolerance degree                 | : | + 4.0 |
| control lever<br>position degree | : | 15.0  |
| tolerance degree                 | : | + 4.0 |

Testing:

|                 |   |        |
|-----------------|---|--------|
| Rated speed rpm | : | 325    |
| rack travel mm  | : | 4.40   |
| Tolerance mm    | : | + 0.10 |

Rated speed rpm : 225  
CRT mm min. : > 6.00  
Rated speed rpm : 350

---

#### TORQUE CONTROL

Rated speed rpm : 1000  
rack travel mm : 13.80  
Tolerance mm : ± 0.05  
  
Rated speed rpm : 700  
rack travel mm : 13.45  
Tolerance mm : ± 0.20  
  
Rated speed rpm : 600  
rack travel mm : 12.85  
Tolerance mm : ± 0.20

---

#### ANEROID/ALTITUDE COMPENSATOR TEST

#### SETTING

Rated speed rpm : 1000  
Pressure hPa : 1500  
rack travel mm : 13.80  
Tolerance mm : ± 0.05

#### MEASUREMENT

Pressure hPa : -  
Rated speed rpm : 1000  
rack travel mm : 11.15  
Tolerance mm : ± 0.10

Rated speed rpm : 1000

Pressure hPa : 260  
rack travel mm : 11.70  
Tolerance mm : ± 0.20

Pressure hPa : 370  
rack travel mm : 13.20  
Tolerance mm : ± 0.05

---

#### START CUT-OUT

Rated speed rpm : < 255  
Check  
speed 1/min : < 265

---

#### FUEL DELIVERY CHARACTERISTICS

Aneroid pressure  
hPa : 1500  
Rated speed rpm : 700  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 230.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 3.0  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 6.0

Aneroid pressure  
hPa : -  
Rated speed rpm : 500  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 191.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 2.0  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 4.0

---

#### BREAKAWAY

Rack travel in mm : 12.80  
Rated speed rpm : 1045  
Tolerance 1/min : ± 5

---

#### STARTING FUEL DELIVERY

Rated speed rpm : 100  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 300.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 20.0  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 24.0

---

#### LOW IDLE

Rated speed rpm : 325  
rack travel mm : 4.40  
Tolerance mm : ± 0.30  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 38.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 3.0  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 6.0  
Speed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

---

End of test specification sheet.

# BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 08.09.95  
Test oil : ISO 4113

Combination No. : 0 402 646 744

Injection pump  
Pump designation : PE6P120A320LS7872  
EP type number : 0 412 626 912

Governor  
Governor design. : RQV300...1050PA1259  
Governor no. : 0 421 814 169

Cust. part No. : 04221532 KY 0165-17

Customer-spec. information  
Customer : KHD  
Motor : BF6M1015C  
Power kW : 270.0

## TEST BENCH REQUIREMENTS

Inlet line : 3.1

Test oil inlet  
temp. °C : 40  
Tolerance °C : ± 2.0

Overflow valve : 1 417 413 025

Inlet press. bar : 1.5  
Tolerance bar : ± 0.1

Test nozzle holder  
assembly : 1 688 901 105

Opening pressure  
bar : 208.5  
Tolerance bar : ± 1.5

Test Lines : 1 680 750 075

Outside diameter : 8.0

x inside diameter : 3.0  
x length mm : 1000

## REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

## BEGINNING OF DELIVERY

Test pressure bar : 26.0  
Tolerance bar : ± 1.0

Prestroke mm : 4.05  
Tolerance mm : ± 0.05

test only : ± 0.10

Rack travel in mm : 10.50  
Tolerance mm : ± 1.50

Firing order : 1- 6- 3- 5- 2-  
: 4

Phasing : 0-60-120-180-240  
: -300  
Tolerance : ± 0.30  
Check  
tolerance °NW : ± 0.50

Start of delivery mark

Barrel no. : 1

## BASIC SETTING

Rated speed rpm : 1050

Rack travel in mm : 13.70  
Tolerance mm : ± 0.05

Del. quantity  
cm<sup>3</sup>/1000 strokes : 328.0

Tolerance  
cm<sup>3</sup>/1000 strokes : ± 1.0

Check tolerance  
cm<sup>3</sup>/1000s. : ± 4.0

---

Speed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 6.0

---

Check tolerance  
cm<sup>3</sup>/1000S. : 9.0

Rated speed rpm : 300

Rack travel in mm : 5.00  
Tolerance mm : ± 0.20

Del. quantity  
cm<sup>3</sup>/1000 strokes : 23.0

Tolerance  
cm<sup>3</sup>/1000 strokes : ± 3.0

Check tolerance  
cm<sup>3</sup>/1000S. : ± 6.0

Speed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

#### (B) SETTING OF INJECTION PUMP WITH GOVERNOR

---

##### GUIDE SLEEVE TRAVEL

Rated speed rpm : 300  
guide sleeve  
travel mm : 1.24  
Tolerance mm : ± 0.20

Rated speed rpm : 1098  
guide sleeve  
travel mm : 10.02  
Tolerance mm : ± 0.15

Rated speed rpm : 860  
guide sleeve  
travel mm : 5.59  
Tolerance mm : ± 0.25

Rated speed rpm : 560  
guide sleeve  
travel mm : 3.24  
Tolerance mm : ± 0.25

Rated speed rpm : 1154  
guide sleeve  
travel mm : 12.00  
Tolerance mm : ± 0.25

Rated speed rpm : 1230  
guide sleeve  
travel mm : 13.50  
Tolerance mm : ± 0.50

---

##### GUIDE SLEEVE POSITION

Rated speed rpm : 1118

Rack travel in mm : 12.70  
Tolerance mm : ± 1.30

---

##### FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1050  
Aneroid pressure  
hPa : 1700

Del. quantity  
cm<sup>3</sup>/1000 strokes : 328.0

Tolerance  
cm<sup>3</sup>/1000 strokes : ± 1.0

Check tolerance  
cm<sup>3</sup>/1000S. : ± 4.0

Speed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 6.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 9.0

---

##### RATED SPEED

control lever  
position degree : 121.0  
tolerance degree : ± 4.0

rack travel mm : 12.70  
Rated speed rpm : 1085  
Tolerance 1/min : ± 5

rack travel mm : 4.00  
Rated speed rpm : 1125  
Tolerance 1/min : ± 15

rack travel mm : 0.50  
Tolerance mm : ± 0.50  
Rated speed rpm : 1280

---

##### LOW IDLE

control lever  
position degree : 77.0  
tolerance degree : ± 4.0

##### Testing:

Rated speed rpm : 300  
rack travel mm : 5.00  
Tolerance mm : ± 0.10



Rated speed rpm : 200  
CRT mm min. : > 8.00  
Rated speed rpm : 345

---

#### TORQUE CONTROL

Rated speed rpm : 1050  
rack travel mm : 13.70  
Tolerance mm :  $\pm$  0.05

---

#### ANEROID/ALTITUDE COMPENSATOR TEST

#### SETTING

Rated speed rpm : 400  
Pressure hPa : 1700  
rack travel mm : 13.70  
Tolerance mm :  $\pm$  0.05

#### MEASUREMENT

Pressure hPa : -  
Rated speed rpm : 400  
rack travel mm : 8.70  
Tolerance mm :  $\pm$  0.20

Rated speed rpm : 400

Pressure hPa : 450  
rack travel mm : 10.00  
Tolerance mm :  $\pm$  0.10

Pressure hPa : 1000  
rack travel mm : 12.50  
Tolerance mm :  $\pm$  0.05

---

#### START CUT-OUT

Rated speed rpm : < 220  
Check  
speed 1/min : < 240

---

#### FUEL DELIVERY CHARACTERISTICS

Aneroid pressure  
hPa : -  
Rated speed rpm : 400  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 230.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  1.0

Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  4.0

---

#### BREAKAWAY

Rack travel in mm : 12.70  
Rated speed rpm : 1085  
Tolerance 1/min :  $\pm$  5

---

#### STARTING FUEL DELIVERY

Rated speed rpm : 100  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 190.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  20.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  24.0

---

#### LOW IDLE

Rated speed rpm : 300  
rack travel mm : 5.00  
Tolerance mm :  $\pm$  0.20  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 23.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  3.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  6.0  
Speed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

---

End of test specification sheet

# BOSCH INJ. PUMP TEST SPECIFICATIONS

## Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 20.06.95  
Test oil : ISO 4113

Combination No. : 0 402 646 951

Injection pump  
Pump designation : PE6P120A720RS7188  
: -10  
EP type number : 0 412 626 924

Governor  
Governor design. : RQ200...950PA745-3  
Governor no. : 0 421 801 579

Cust. part No. : 1332288

## Customer-spec. information

Customer : SCANIA  
Motor : DSC 11 77

## TEST BENCH REQUIREMENTS

Inlet line : 4.2

Vibration  
damper  
(RoBo diaphragm) : 3.1

Test oil inlet  
temp. °C : 40  
Tolerance °C : ± 2.0

Overflow valve : 1 417 413 025

Inlet press. bar : 2.5  
Tolerance bar : ± 0.1

Test nozzle holde  
assembly : 1 688 901 104

Opening pressure  
bar : 251.5  
Tolerance bar : ± 1.5

Test lines : 1 680 750 008

Outside diameter : 6.0

x inside diameter : 2.0  
x length mm : 600

## REMARKS

Start-of-delivery setting with ROBO diaphragm.

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

## BEGINNING OF DELIVERY

Test pressure bar : 26.0  
Tolerance bar : ± 1.0

Prestroke mm : 4.45  
Tolerance mm : ± 0.05

test only : ± 0.10

Rack travel in mm : 10.50  
Tolerance mm : ± 1.50

Firing order : 1- 5- 3- 6- 2-  
: 4

Phasing : 0-60-120-180-240  
: -300

Tolerance : ± 0.30

Check  
tolerance °NW : ± 0.50

Start of delivery mark

Barrel no. : 1

## BASIC SETTING

Rated speed rpm : 700

Rack travel in mm : 11.15  
Tolerance mm : ± 0.05

Del. quantity  
cm<sup>3</sup>/1000 strokes : 171.0

Tolerance  
cm<sup>3</sup>/1000 strokes : +- 1.0

Check tolerance  
cm<sup>3</sup>/1000S. : +- 4.0

Spread  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0

Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

Rated speed rpm : 225

Rack travel in mm : 4.80  
Tolerance mm : +- 0.30

Del. quantity  
cm<sup>3</sup>/1000 strokes : 14.0

Tolerance  
cm<sup>3</sup>/1000 strokes : +- 3.0

Check tolerance  
cm<sup>3</sup>/1000S. : +- 6.0

Spread  
Tolerance  
cm<sup>3</sup>/1000 strokes : 4.0

Check tolerance  
cm<sup>3</sup>/1000S. : 8.0

#### (B) SETTING OF INJECTION PUMP WITH GOVERNOR

##### GUIDE SLEEVE TRAVEL

Rated speed rpm : 225  
guide sleeve  
travel mm : 1.13  
Tolerance mm : +- 0.20

Rated speed rpm : 1006  
guide sleeve  
travel mm : 4.90  
Tolerance mm : +- 0.15

Rated speed rpm : 930  
guide sleeve  
travel mm : 4.50  
Tolerance mm : +- 0.10

Rated speed rpm : 343  
guide sleeve  
travel mm : 2.76  
Tolerance mm : +- 0.10

Rated speed rpm : 520

guide sleeve  
travel mm : 4.50  
Tolerance mm : +- 0.10

Rated speed rpm : 1045  
guide sleeve  
travel mm : 5.50  
Tolerance mm : +- 0.10

Rated speed rpm : 1360  
guide sleeve  
travel mm : 11.50  
Tolerance mm : +- 0.50

##### GUIDE SLEEVE POSITION

Rated speed rpm : 500

Rack travel in mm : 20.00  
Tolerance mm : +- 0.80

##### FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 700  
Aneroid pressure  
hPa : -

Del. quantity  
cm<sup>3</sup>/1000 strokes : 171.0

Tolerance  
cm<sup>3</sup>/1000 strokes : +- 1.0

Check tolerance  
cm<sup>3</sup>/1000S. : +- 4.0

Spread  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0

Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

##### RATED SPEED

control lever  
position degree : 44.0  
tolerance degree : +- 4.0

control lever  
position degree : 98.0  
tolerance degree : +- 4.0

rack travel mm : 10.10  
Rated speed rpm : 995  
Tolerance 1/min : +- 5

rack travel mm : 4.00  
Rated speed rpm : 1120  
Tolerance 1/min : +- 15

rack travel mm : 0.50  
Tolerance mm :  $\pm$  0.50  
Rated speed rpm : 1200

---

#### LOW IDLE

control lever  
position degree : 64.0  
tolerance degree :  $\pm$  4.0

control lever  
position degree : 9.0  
tolerance degree :  $\pm$  4.0

#### Testing:

Rated speed rpm : 225  
rack travel mm : 4.80  
Tolerance mm :  $\pm$  0.10

rack travel mm : 2.00  
Rated speed rpm : 340  
Tolerance 1/min :  $\pm$  20

Rated speed rpm : 125

CRT mm min. :  $>$  5.80

---

#### TORQUE CONTROL

Rated speed rpm : 700  
rack travel mm : 11.15  
Tolerance mm :  $\pm$  0.05

Rated speed rpm : 950  
rack travel mm : 11.15  
Tolerance mm :  $\pm$  0.05

---

#### ANEROID/ALTITUDE COMPENSATOR TEST

##### SETTING

Rated speed rpm : 500  
Pressure hPa : 1500  
rack travel mm : 11.15  
Tolerance mm :  $\pm$  0.05

##### MEASUREMENT

Pressure hPa : -  
Rated speed rpm : 500  
rack travel mm : 9.50  
Tolerance mm :  $\pm$  0.20

Rated speed rpm : 500

Pressure hPa : 280  
rack travel mm : 9.90  
Tolerance mm :  $\pm$  0.15

Pressure hPa : 420  
rack travel mm : 10.75  
Tolerance mm :  $\pm$  0.05

---

#### FUEL DELIVERY CHARACTERISTICS

Aneroid pressure  
hPa : -  
Rated speed rpm : 950  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 171.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  4.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  6.0

Aneroid pressure  
hPa : -  
Rated speed rpm : 500  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 122.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  1.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  4.0

---

#### BREAKAWAY

Rack travel in mm : 10.10  
Rated speed rpm : 995  
Tolerance 1/min :  $\pm$  5

---

#### STARTING FUEL DELIVERY

Rated speed rpm : 100  
rack travel mm : 10.40  
Tolerance mm :  $\pm$  0.20  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  20.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  24.0

---

#### LOW IDLE

Rated speed rpm : 225

|                               |   |        |
|-------------------------------|---|--------|
| rack travel mm                | : | 4.80   |
| Tolerance mm                  | : | ± 0.30 |
| Del. quantity                 |   |        |
| cm <sup>3</sup> /1000 strokes | : | 14.0   |
| Tolerance                     |   |        |
| cm <sup>3</sup> /1000 strokes | : | ± 3.0  |
| Check tolerance               |   |        |
| cm <sup>3</sup> /1000s.       | : | ± 6.0  |
| Spread                        |   |        |
| Tolerance                     |   |        |
| cm <sup>3</sup> /1000 strokes | : | 4.0    |
| Check tolerance               |   |        |
| cm <sup>3</sup> /1000s.       | : | 8.0    |

---

End of test specification sheet

# BOSCH INJ. PUMP TEST SPECIFICATIONS

## Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 17.05.95  
Test oil : ISO 4113

Combination No. : 0 402 646 990

Injection pump  
Pump designation : PE6P130A720RS7225  
EP type number : 0 412 636 817

Governor  
Governor design. : RQV300...950PA975  
: -2K  
Governor no. : 0 421 815 310

Cust. part No. :

Customer-spec. information  
Customer : IVECO-FRANCE  
Motor : 8210.42.369

## TEST BENCH REQUIREMENTS

Inlet line : 4.2

Test oil inlet  
temp. °C : 40  
Tolerance °C : ± 2.0

Overflow valve : 1 417 413 025

Inlet press. bar : 1.5  
Tolerance bar : ± 0.1

Test nozzle holde  
assembly : 1 688 901 105

Opening pressure  
bar : 208.5  
Tolerance bar : ± 1.5

Test lines : 1 680 750 075

Outside diameter : 8.0

x inside diameter : 3.0  
x length mm : 1000

## REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

## BEGINNING OF DELIVERY

Test pressure bar : 26.0  
Tolerance bar : ± 1.0

Prestroke mm : 5.05  
Tolerance mm : ± 0.05

test only : ± 0.10

Rack travel in mm : 12.00  
Tolerance mm : ± 0.50

Firing order : 1- 5- 3- 6- 2-  
: 4

Phasing : 0-60-120-180-240  
: -300

Tolerance : ± 0.30  
Check  
tolerance °NW : ± 0.75

Start of delivery mark

Barrel no. : 1

## BASIC SETTING

Rated speed rpm : 950

Rack travel in mm : 12.15  
Tolerance mm : ± 0.05

Del. quantity  
cm3/1000 strokes : 269.0

Tolerance  
cm3/1000 strokes : ± 1.0

Check tolerance  
cm3/1000S. : ± 4.0

---

Spreed  
Tolerance  
cm3/1000 strokes : 5.0

---

Check tolerance  
cm3/1000S. : 8.0

Del. quantity  
cm3/1000 strokes : 29.0  
Tolerance  
cm3/1000 strokes : +- 3.0  
Check tolerance  
cm3/1000S. : +- 7.0

Spreed  
Tolerance  
cm3/1000 strokes : 8.0  
Check tolerance  
cm3/1000S. : 12.0

(B) SETTING OF INJECTION PUMP  
WITH GOVERNOR

---

GUIDE SLEEVE POSITION

Rated speed rpm : 1175  
Rack travel in mm : 11.00  
Tolerance mm : +- 1.30

---

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 950  
Aneroid pressure  
hPa : 1000  
Del. quantity  
cm3/1000 strokes : 269.0  
Tolerance  
cm3/1000 strokes : +- 1.0  
Check tolerance  
cm3/1000S. : +- 4.0  
Spreed  
Tolerance  
cm3/1000 strokes : 5.0  
Check tolerance  
cm3/1000S. : 8.0

---

RATED SPEED

control lever  
position degree : 116.0  
tolerance degree : +- 4.0  
rack travel mm : 11.10

Rated speed rpm : 995  
Tolerance 1/min : +- 5

rack travel mm : 4.00  
Rated speed rpm : 1095  
Tolerance 1/min : +- 15

rack travel mm : 0.50  
Tolerance mm : +- 0.50  
Rated speed rpm : 1200

rack travel mm : 4.00

---

LOW IDLE

control lever  
position degree : 65.0  
tolerance degree : +- 4.0

Testing:

Rated speed rpm : 300  
rack travel mm : 4.70  
Tolerance mm : +- 0.10

Rated speed rpm : 100

CRT mm min. : > 6.20

Rated speed rpm : 400

---

TORQUE CONTROL

Rated speed rpm : 950  
rack travel mm : 12.15  
Tolerance mm : +- 0.05

Rated speed rpm : 700  
rack travel mm : 12.15  
Tolerance mm : +- 0.10

Rated speed rpm : 550  
rack travel mm : 12.15  
Tolerance mm : +- 0.10

Rated speed rpm : 350  
rack travel mm : 11.60  
Tolerance mm : +- 0.15

---

ANEROID/ALTITUDE  
COMPENSATOR TEST

SETTING

Rated speed rpm : 950

Pressure hPa : 1000  
rack travel mm : 12.15  
Tolerance mm :  $\pm$  0.05

#### MEASUREMENT

Pressure hPa : -  
Rated speed rpm : 950  
rack travel mm : 8.80  
Tolerance mm :  $\pm$  0.20

Rated speed rpm : 950

Pressure hPa : 480  
rack travel mm : 11.45  
Tolerance mm :  $\pm$  0.10

Pressure hPa : 300  
rack travel mm : 9.85  
Tolerance mm :  $\pm$  0.05

#### START CUT-OUT

Rated speed rpm : < 240  
Check  
speed 1/min : < 260

#### FUEL DELIVERY CHARACTERISTICS

Aneroid pressure  
hPa : 1000  
Rated speed rpm : 700  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 271.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  4.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  7.0

Aneroid pressure  
hPa : 1000  
Rated speed rpm : 550  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 279.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  2.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  5.0

Aneroid pressure  
hPa : -  
Rated speed rpm : 550  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 161.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  1.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  4.0

#### BREAKAWAY

Rack travel in mm : 11.10  
Rated speed rpm : 995  
Tolerance 1/min :  $\pm$  5

#### STARTING FUEL DELIVERY

Rated speed rpm : 100  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 150.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  20.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  24.0

#### LOW IDLE

Del. quantity  
cm<sup>3</sup>/1000 strokes : 29.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  3.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  7.0  
Speed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

End of test specification sheet



# BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 24.08.95  
Test oil : ISO 4113  
Combination No. : 0 402 648 602  
Injection pump  
Pump designation : PE8P110A320RS7398  
EP type number : 0 412 618 800  
Governor  
Governor design. : RQV300...900PA1252K  
Governor no. : 0 421 815 484

Cust. part No. :

Customer-spec. information  
Customer : TATRA  
Motor : T38-928.60  
Power KW : 255.0

## TEST BENCH REQUIREMENTS

Inlet Line : 3.2  
Test oil inlet  
temp. °C : 40  
Tolerance °C : ± 2.0

Overflow valve : 1 417 413 025

Inlet press. bar : 1.5  
Tolerance bar : ± 0.1

Test nozzle holde  
assembly : 1 688 901 101

Opening pressure  
bar : 208.5  
Tolerance bar : ± 1.5

Test Lines : 1 680 750 008

Outside diameter : 6.0

x inside diameter : 2.0  
x length mm : 600

## REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

## BEGINNING OF DELIVERY

Test pressure bar : 26.0  
Tolerance bar : ± 1.0

Prestroke mm : 5.05  
Tolerance mm : ± 0.05

test only : ± 0.10

Rack travel in mm : 13.00  
Tolerance mm : ± 1.00

Firing order : 1- 8- 5- 4- 7  
                  : - 2- 3- 6

Phasing : 0-45-90-135-180  
          : -225-270-315

Tolerance : ± 0.30  
Check  
tolerance \*NW : ± 0.50

Start of delivery mark

Barrel no. : 1

## BASIC SETTING

Rated speed rpm : 900

Rack travel in mm : 14.00  
Tolerance mm : ± 0.05

Del. quantity  
cm<sup>3</sup>/1000 strokes : 191.0

Tolerance  
cm<sup>3</sup>/1000 strokes : ± 1.0

Check tolerance  
cm<sup>3</sup>/1000S. : ± 4.0

|                                 |     |
|---------------------------------|-----|
| Spreed                          |     |
| Tolerance                       |     |
| cm <sup>3</sup> /1000 strokes : | 5.0 |

---

|                         |       |
|-------------------------|-------|
| Check tolerance         |       |
| cm <sup>3</sup> /1000S. | : 9.0 |

---

|                                 |          |
|---------------------------------|----------|
| Rated speed rpm                 | : 250    |
| Tolerance mm                    | : + 0.30 |
| Del. quantity                   |          |
| cm <sup>3</sup> /1000 strokes : | 17.0     |
| Tolerance                       |          |
| cm <sup>3</sup> /1000 strokes : | + 3.0    |
| Check tolerance                 |          |
| cm <sup>3</sup> /1000S.         | : + 6.0  |
| Spreed                          |          |
| Tolerance                       |          |
| cm <sup>3</sup> /1000 strokes : | 8.0      |
| Check tolerance                 |          |
| cm <sup>3</sup> /1000S.         | : 12.0   |

(B) SETTING OF INJECTION PUMP  
WITH GOVERNOR

GUIDE SLEEVE TRAVEL

|                 |          |
|-----------------|----------|
| Rated speed rpm | : 300    |
| guide sleeve    |          |
| travel mm       | : 1.63   |
| Tolerance mm    | : + 0.20 |

  

|                 |          |
|-----------------|----------|
| Rated speed rpm | : 958    |
| guide sleeve    |          |
| travel mm       | : 8.79   |
| Tolerance mm    | : + 0.15 |

  

|                 |          |
|-----------------|----------|
| Rated speed rpm | : 777    |
| guide sleeve    |          |
| travel mm       | : 6.70   |
| Tolerance mm    | : + 0.25 |

  

|                 |          |
|-----------------|----------|
| Rated speed rpm | : 520    |
| guide sleeve    |          |
| travel mm       | : 3.73   |
| Tolerance mm    | : + 0.25 |

  

|                 |          |
|-----------------|----------|
| Rated speed rpm | : 1260   |
| guide sleeve    |          |
| travel mm       | : 13.50  |
| Tolerance mm    | : + 0.50 |

GUIDE SLEEVE POSITION

|                     |        |
|---------------------|--------|
| Rated speed rpm     | : 1115 |
| Rack travel in mm : | 13.00  |

|              |          |
|--------------|----------|
| Tolerance mm | : + 1.30 |
|--------------|----------|

FULL LOAD DELIVERY AT FULL LOAD STOP

|                                 |         |
|---------------------------------|---------|
| Rated speed rpm                 | : 900   |
| Aneroid pressure                |         |
| hPa                             | : -     |
| Del. quantity                   |         |
| cm <sup>3</sup> /1000 strokes : | 191.0   |
| Tolerance                       |         |
| cm <sup>3</sup> /1000 strokes : | + 1.0   |
| Check tolerance                 |         |
| cm <sup>3</sup> /1000S.         | : + 4.0 |
| Spreed                          |         |
| Tolerance                       |         |
| cm <sup>3</sup> /1000 strokes : | 5.0     |
| Check tolerance                 |         |
| cm <sup>3</sup> /1000S.         | : 9.0   |

RATED SPEED

|                  |         |
|------------------|---------|
| control lever    |         |
| position degree  | : 61.0  |
| tolerance degree | : + 4.0 |

|                  |         |
|------------------|---------|
| control lever    |         |
| position degree  | : 115.0 |
| tolerance degree | : + 4.0 |

|                 |         |
|-----------------|---------|
| rack travel mm  | : 13.00 |
| Rated speed rpm | : 945   |
| Tolerance 1/min | : + 5   |

|                 |        |
|-----------------|--------|
| rack travel mm  | : 4.00 |
| Rated speed rpm | : 1055 |
| Tolerance 1/min | : + 15 |

|                 |          |
|-----------------|----------|
| rack travel mm  | : 0.50   |
| Tolerance mm    | : + 0.50 |
| Rated speed rpm | : 1150   |

LOW IDLE

|                  |         |
|------------------|---------|
| control lever    |         |
| position degree  | : 72.0  |
| tolerance degree | : + 4.0 |

|                  |         |
|------------------|---------|
| control lever    |         |
| position degree  | : 18.0  |
| tolerance degree | : + 4.0 |

Testing:

|                 |          |
|-----------------|----------|
| Rated speed rpm | : 250    |
| Tolerance mm    | : + 0.10 |

Rated speed rpm : 150  
CRT mm min. : > 6.47  
Rated speed rpm : 350

---

#### TORQUE CONTROL

Rated speed rpm : 900  
rack travel mm : 14.00  
Tolerance mm :  $\pm$  0.05

Rated speed rpm : 600  
rack travel mm : 13.10  
Tolerance mm :  $\pm$  0.10

Rated speed rpm : 300  
rack travel mm : 12.20  
Tolerance mm :  $\pm$  0.20

---

#### ANEROID/ALTITUDE COMPENSATOR TEST

##### SETTING

Rated speed rpm : 900  
Pressure hPa : 1500  
rack travel mm : 14.00  
Tolerance mm :  $\pm$  0.05

##### MEASUREMENT

Pressure hPa : -  
Rated speed rpm : 900  
rack travel mm : 8.90  
Tolerance mm :  $\pm$  0.20

Rated speed rpm : 900

Pressure hPa : 375  
rack travel mm : 10.25  
Tolerance mm :  $\pm$  0.15

Pressure hPa : 750  
rack travel mm : 12.75  
Tolerance mm :  $\pm$  0.05

---

#### START CUT-OUT

Rated speed rpm : < 170  
Check  
speed 1/min : < 190

---

#### FUEL DELIVERY CHARACTERISTICS

Aneroid pressure  
hPa : -  
Rated speed rpm : 600  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 198.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  2.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  5.0

Aneroid pressure  
hPa : -  
Rated speed rpm : 500  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 129.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  2.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  4.0

---

#### BREAKAWAY

Rack travel in mm : 13.00  
Rated speed rpm : 945  
Tolerance 1/min :  $\pm$  5

---

#### STARTING FUEL DELIVERY

Rated speed rpm : 100  
rack travel mm : 20.50  
Tolerance mm :  $\pm$  0.50  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 255.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  20.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  24.0

---

#### LOW IDLE

Rated speed rpm : 250  
Tolerance mm :  $\pm$  0.30  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 17.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  3.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  6.0  
Speed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0

Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

---

End of test specification sheet

# BOSCH INJ. PUMP TEST SPECIFICATIONS

## Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 24.08.95  
Test oil : ISO 4113  
Combination No. : 0 402 648 602A  
Injection pump  
Pump designation : PE8P110A32ORS7398  
EP type number : 0 412 618 800  
Governor  
Governor design. : RQV300...900PA1252K  
Governor no. : 0 421 815 484

Cust. part No. :

Customer-spec. information  
Customer : TATRA  
Motor : T3B-928.50  
Power kW : 230.0

## TEST BENCH REQUIREMENTS

Inlet line : 3.2  
Test oil inlet  
temp. °C : 40  
Tolerance °C : ± 2.0

Overflow valve : 1 417 413 025

Inlet press. bar : 1.5  
Tolerance bar : ± 0.1

Test nozzle holde  
assembly : 1 688 901 101

Opening pressure  
bar : 208.5  
Tolerance bar : ± 1.5

Test lines : 1 680 750 008

Outside diameter : 6.0

x inside diameter : 2.0  
x length mm : 600

## REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

## BEGINNING OF DELIVERY

Test pressure bar : 26.0  
Tolerance bar : ± 1.0

Prestroke mm : 5.05  
Tolerance mm : ± 0.05

test only : ± 0.10

Rack travel in mm : 13.00  
Tolerance mm : ± 1.00

Firing order : 1- 8- 5- 4- 7  
                  : - 2- 3- 6

Phasing : 0-45-90-135-180  
          : -225-270-315

Tolerance : ± 0.30  
Check  
tolerance °NW : ± 0.50

Start of delivery mark

Barrel no. : 1

## BASIC SETTING

Rated speed rpm : 900

Rack travel in mm : 13.30  
Tolerance mm : ± 0.05

Del. quantity  
cm<sup>3</sup>/1000 strokes : 175.0

Tolerance  
cm<sup>3</sup>/1000 strokes : ± 1.0

Check tolerance  
cm<sup>3</sup>/1000s. : ± 4.0

Speed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 5.0

Check tolerance  
cm<sup>3</sup>/1000S. : 9.0

Rated speed rpm : 250  
Tolerance mm :  $\pm$  0.30  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 17.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  3.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  6.0  
Speed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

#### (B) SETTING OF INJECTION PUMP WITH GOVERNOR

##### GUIDE SLEEVE TRAVEL

Rated speed rpm : 300  
guide sleeve  
travel mm : 1.63  
Tolerance mm :  $\pm$  0.20

Rated speed rpm : 957  
guide sleeve  
travel mm : 8.79  
Tolerance mm :  $\pm$  0.15

Rated speed rpm : 776  
guide sleeve  
travel mm : 6.70  
Tolerance mm :  $\pm$  0.25

Rated speed rpm : 520  
guide sleeve  
travel mm : 3.73  
Tolerance mm :  $\pm$  0.25

Rated speed rpm : 1260  
guide sleeve  
travel mm : 13.50  
Tolerance mm :  $\pm$  0.50

##### GUIDE SLEEVE POSITION

Rated speed rpm : 1120  
Rack travel in mm : 12.30

Tolerance mm :  $\pm$  1.30

##### FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 900  
Aneroid pressure  
hPa : -  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 175.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  1.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  4.0  
Speed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 5.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 9.0

##### RATED SPEED

control lever  
position degree : 61.0  
tolerance degree :  $\pm$  4.0

control lever  
position degree : 115.0  
tolerance degree :  $\pm$  4.0

rack travel mm : 12.30  
Rated speed rpm : 945  
Tolerance 1/min :  $\pm$  5

rack travel mm : 4.00  
Rated speed rpm : 1095  
Tolerance 1/min :  $\pm$  15

rack travel mm : 0.50  
Tolerance mm :  $\pm$  0.50  
Rated speed rpm : 1100

##### LOW IDLE

control lever  
position degree : 72.0  
tolerance degree :  $\pm$  4.0

control lever  
position degree : 18.0  
tolerance degree :  $\pm$  4.0

##### Testing:

Rated speed rpm : 250  
Tolerance mm :  $\pm$  0.10

Rated speed rpm : 150  
CRT mm min. : > 6.50  
Rated speed rpm : 360

---

#### TORQUE CONTROL

Rated speed rpm : 900  
rack travel mm : 13.30  
Tolerance mm : + 0.05

Rated speed rpm : 600  
rack travel mm : 12.30  
Tolerance mm : + 0.10

Rated speed rpm : 300  
rack travel mm : 11.50  
Tolerance mm : + 0.20

---

#### ANEROID/ALTITUDE COMPENSATOR TEST

#### SETTING

Rated speed rpm : 900  
Pressure hPa : 1500  
rack travel mm : 13.30  
Tolerance mm : + 0.05

#### MEASUREMENT

Pressure hPa : -  
Rated speed rpm : 900  
rack travel mm : 8.90  
Tolerance mm : + 0.20

Rated speed rpm : 900

Pressure hPa : 425  
rack travel mm : 10.00  
Tolerance mm : + 0.15

Pressure hPa : 750  
rack travel mm : 12.25  
Tolerance mm : + 0.05

---

#### START CUT-OUT

Rated speed rpm : < 220  
Check  
speed 1/min : < 240

---

#### FUEL DELIVERY CHARACTERISTICS

Aneroid pressure  
hPa : -  
Rated speed rpm : 600  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 182.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : + 2.0  
Check tolerance  
cm<sup>3</sup>/1000S. : + 5.0

Aneroid pressure  
hPa : -  
Rated speed rpm : 500  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 129.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : + 2.0  
Check tolerance  
cm<sup>3</sup>/1000S. : + 4.0

---

#### BREAKAWAY

Rack travel in mm : 12.30  
Rated speed rpm : 945  
Tolerance 1/min : + 5

---

#### STARTING FUEL DELIVERY

Rated speed rpm : 100  
rack travel mm : 20.50  
Tolerance mm : + 0.50  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 255.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : + 20.0  
Check tolerance  
cm<sup>3</sup>/1000S. : + 24.0

---

#### LOW IDLE

Rated speed rpm : 250  
Tolerance mm : + 0.30  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 17.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : + 3.0  
Check tolerance  
cm<sup>3</sup>/1000S. : + 6.0  
Speed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0

Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

---

End of test specification sheet



# BOSCH INJ. PUMP TEST SPECIFICATIONS

## Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 21.09.95  
Test oil : ISO 4113

Combination No. : 0 402 648 796

Injection pump  
Pump designation : PE8P120A320LS7875  
EP type number : 0 412 628 881

Governor  
Governor design. : RQV250...1150PA1240  
Governor no. : 0 421 814 160

Cust. part No. :

Customer-spec. information  
Customer : DAEWOO  
Motor : V2-8TC  
Power KW : 265.0

## TEST BENCH REQUIREMENTS

Inlet line : 3.1

Test oil inlet  
temp. °C : 40  
Tolerance °C : ± 2.0

Overflow valve : 1 417 413 025

Inlet press. bar : 1.5  
Tolerance bar : ± 0.1

Overflow quantity  
min. L/h : 90  
Tolerance L/h : ± 10.0

Test nozzle holde  
assembly : 1 688 901 105

Opening pressure  
bar : 208.5  
Tolerance bar : ± 1.5

Test Lines : 1 680 750 089

Outside diameter : 8.0

x inside diameter : 3.0  
x length mm : 600

## REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

## BEGINNING OF DELIVERY

Test pressure bar : 26.0  
Tolerance bar : ± 1.0

Prestroke mm : 5.20  
Tolerance mm : ± 0.05

test only : ± 0.10

Rack travel in mm : 16.00  
Tolerance mm : ± 1.50

Firing order : 8- 7- 2- 6- 3  
: - 5- 4- 1

Phasing : 0-45-90-135-180  
: -225-270-315  
Tolerance : ± 0.30  
Check  
tolerance \*NW : ± 0.50

Start of delivery mark

Barrel no. : 8

## BASIC SETTING

Rated speed rpm : 1150

Rack travel in mm : 12.70  
Tolerance mm : ± 0.05

Del. quantity  
cm<sup>3</sup>/1000 strokes : 200.0

Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  1.0

Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  4.0

Spread  
Tolerance  
cm<sup>3</sup>/1000 strokes : 7.0

Check tolerance  
cm<sup>3</sup>/1000S. : 10.0

Rated speed rpm : 250

Rack travel in mm : 5.50  
Tolerance mm :  $\pm$  0.30

Del. quantity  
cm<sup>3</sup>/1000 strokes : 20.0

Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  3.0

Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  6.0

Spread  
Tolerance  
cm<sup>3</sup>/1000 strokes : 5.0

Check tolerance  
cm<sup>3</sup>/1000S. : 8.0

#### (B) SETTING OF INJECTION PUMP WITH GOVERNOR

##### GUIDE SLEEVE TRAVEL

Rated speed rpm : 250  
guide sleeve  
travel mm : 1.54  
Tolerance mm :  $\pm$  0.20

Rated speed rpm : 1206  
guide sleeve  
travel mm : 8.12  
Tolerance mm :  $\pm$  0.15

Rated speed rpm : 930  
guide sleeve  
travel mm : 5.50  
Tolerance mm :  $\pm$  0.25

Rated speed rpm : 317  
guide sleeve  
travel mm : 2.69  
Tolerance mm :  $\pm$  0.25

Rated speed rpm : 367  
guide sleeve  
travel mm : 3.18  
Tolerance mm :  $\pm$  0.25

Rated speed rpm : 530  
guide sleeve  
travel mm : 3.62  
Tolerance mm :  $\pm$  0.25

Rated speed rpm : 1307  
guide sleeve  
travel mm : 10.00  
Tolerance mm :  $\pm$  0.25

Rated speed rpm : 1400  
guide sleeve  
travel mm : 11.50  
Tolerance mm :  $\pm$  0.50

##### GUIDE SLEEVE POSITION

Rated speed rpm : 1265

Rack travel in mm : 12.40  
Tolerance mm :  $\pm$  1.30

##### FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1150  
Aneroid pressure  
hPa : -

Del. quantity  
cm<sup>3</sup>/1000 strokes : 200.0

Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  1.0

Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  4.0

Spread  
Tolerance  
cm<sup>3</sup>/1000 strokes : 7.0

Check tolerance  
cm<sup>3</sup>/1000S. : 10.0

##### RATED SPEED

control lever  
position degree : 55.0  
tolerance degree :  $\pm$  4.0

control lever  
position degree : 119.0  
tolerance degree :  $\pm$  4.0

rack travel mm : 11.70  
Rated speed rpm : 1195  
Tolerance 1/min :  $\pm$  5

rack travel mm : 4.00  
Rated speed rpm : 1280

Tolerance 1/min : + 15  
rack travel mm : 0.50  
Tolerance mm : + 0.50  
Rated speed rpm : 1350

---

#### LOW IDLE

control lever  
position degree : 85.0  
tolerance degree : + 4.0

control lever  
position degree : 21.0  
tolerance degree : + 4.0

#### Testing:

Rated speed rpm : 250  
rack travel mm : 5.50  
Tolerance mm : + 0.10

Rated speed rpm : 150

CRT mm min. : > 8.50

Rated speed rpm : 300

---

#### TORQUE CONTROL

Rated speed rpm : 1150  
rack travel mm : 12.70  
Tolerance mm : + 0.05

Rated speed rpm : 650  
rack travel mm : 12.70  
Tolerance mm : + 0.05

---

#### ANEROID/ALTITUDE COMPENSATOR TEST

#### SETTING

Rated speed rpm : 500  
Pressure hPa : 1500  
rack travel mm : 12.70  
Tolerance mm : + 0.05

#### MEASUREMENT

Pressure hPa : -  
Rated speed rpm : 500  
rack travel mm : 8.40  
Tolerance mm : + 0.20

Rated speed rpm : 500  
Pressure hPa : 315  
rack travel mm : 9.50  
Tolerance mm : + 0.20

Pressure hPa : 725  
rack travel mm : 11.70  
Tolerance mm : + 0.05

---

#### START CUT-OUT

Rated speed rpm : < 190  
Check  
speed 1/min : < 210

---

#### FUEL DELIVERY CHARACTERISTICS

Aneroid pressure  
hPa : -  
Rated speed rpm : 650  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 218.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : + 3.0  
Check tolerance  
cm<sup>3</sup>/1000S. : + 6.0

Aneroid pressure  
hPa : -  
Rated speed rpm : 500  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 135.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : + 1.0  
Check tolerance  
cm<sup>3</sup>/1000S. : + 4.0

---

#### BREAKAWAY

Rack travel in mm : 11.70  
Rated speed rpm : 1195  
Tolerance 1/min : + 5

---

#### STARTING FUEL DELIVERY

Rated speed rpm : 100  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 205.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : + 10.0  
Check tolerance  
cm<sup>3</sup>/1000S. : + 14.0

---

LOW IDLE

Rated speed rpm : 250  
rack travel mm : 5.50  
Tolerance mm :  $\pm$  0.30  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 20.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  3.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  6.0  
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 5.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 8.0

---

End of test specification sheet

## BOSCH INJ. PUMP TEST SPECIFICATIONS

## Note remarks

Refer to Service Info for test and  
adjustment instructions.  
See microcard(s) W400/...

Edition : 22.09.95  
Test oil : ISO 4113

Combination No. : 0 402 746 951

Injection pump  
Pump designation : PES6P120A720RS7292  
: -1

EP type number : 0 412 726 939

Governor  
Governor design. : RQV350...1150PA1074K  
Governor no. : 0 421 815 355

Cust. part No. : 0240747902

Customer-spec. information  
Customer : MB-NFZ  
Motor : OM366LA  
Power KW : 127.0

## TEST BENCH REQUIREMENTS

Inlet line : 4.1

Test oil inlet  
temp. °C : 40  
Tolerance °C : ± 2.0

Overflow valve : 1 417 413 047

Inlet press. bar : 1.5  
Tolerance bar : ± 0.1

Overflow quantity  
min. l/h : 100  
Tolerance l/h : ± 10.0

Test nozzle holder  
assembly : 1 688 901 105

Opening pressure  
bar : 208.5  
Tolerance bar : ± 1.5

005

Test lines : 1 680 750 075

Outside diameter : 8.0

x inside diameter : 3.0  
x length mm : 1000

## REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

## BEGINNING OF DELIVERY

Test pressure bar : 26.0  
Tolerance bar : ± 1.0

Prestroke mm : 4.00  
Tolerance mm : ± 0.05

test only : ± 0.10

Rack travel in mm : 20.50  
Tolerance mm : ± 0.50

Firing order : 1- 5- 3- 6- 2-  
: 4

Phasing : 0-60-120-180-240  
: -300

Tolerance : ± 0.30

Check  
tolerance °NW : ± 0.75

## Start of delivery blocking

\*NW after s.o.d. : 3.30

Barrel no. : 1

## BASIC SETTING

Rated speed rpm : 1150

Rack travel in mm : 14.20  
Tolerance mm : ± 0.05

|                                 |        |
|---------------------------------|--------|
| <hr/>                           |        |
| Del. quantity                   |        |
| cm <sup>3</sup> /1000 strokes : | 271.0  |
| <hr/>                           |        |
| Tolerance                       |        |
| cm <sup>3</sup> /1000 strokes : | + 1.0  |
| <hr/>                           |        |
| Check tolerance                 |        |
| cm <sup>3</sup> /1000S. :       | + 4.0  |
| <hr/>                           |        |
| Spreed                          |        |
| Tolerance                       |        |
| cm <sup>3</sup> /1000 strokes : | 8.0    |
| <hr/>                           |        |
| Check tolerance                 |        |
| cm <sup>3</sup> /1000S. :       | 12.0   |
| <hr/>                           |        |
| Rated speed rpm :               | 350    |
| <hr/>                           |        |
| Rack travel in mm :             | 8.00   |
| Tolerance mm :                  | + 0.30 |
| Del. quantity                   |        |
| cm <sup>3</sup> /1000 strokes : | 13.0   |
| Tolerance                       |        |
| cm <sup>3</sup> /1000 strokes : | + 3.0  |
| Check tolerance                 |        |
| cm <sup>3</sup> /1000S. :       | + 6.0  |
| Spreed                          |        |
| Tolerance                       |        |
| cm <sup>3</sup> /1000 strokes : | 4.0    |
| Check tolerance                 |        |
| cm <sup>3</sup> /1000S. :       | 8.0    |

(B) SETTING OF INJECTION PUMP  
WITH GOVERNOR

GUIDE SLEEVE TRAVEL

|                   |        |
|-------------------|--------|
| Rated speed rpm : | 350    |
| guide sleeve      |        |
| travel mm :       | 1.53   |
| Tolerance mm :    | + 0.20 |
| <hr/>             |        |
| Rated speed rpm : | 1205   |
| guide sleeve      |        |
| travel mm :       | 9.35   |
| Tolerance mm :    | + 0.15 |
| <hr/>             |        |
| Rated speed rpm : | 855    |
| guide sleeve      |        |
| travel mm :       | 5.56   |
| Tolerance mm :    | + 0.25 |
| <hr/>             |        |
| Rated speed rpm : | 550    |
| guide sleeve      |        |
| travel mm :       | 3.17   |
| Tolerance mm :    | + 0.25 |

|                   |        |
|-------------------|--------|
| Rated speed rpm : | 1480   |
| guide sleeve      |        |
| travel mm :       | 13.50  |
| Tolerance mm :    | + 0.50 |

GUIDE SLEEVE POSITION

|                     |        |
|---------------------|--------|
| Rated speed rpm :   | 1329   |
| Rack travel in mm : | 13.00  |
| Tolerance mm :      | + 1.30 |

FULL LOAD DELIVERY AT FULL LOAD STOP

|                                 |       |
|---------------------------------|-------|
| Rated speed rpm :               | 1150  |
| Aneroid pressure                |       |
| hPa :                           | 1500  |
| Del. quantity                   |       |
| cm <sup>3</sup> /1000 strokes : | 271.0 |
| Tolerance                       |       |
| cm <sup>3</sup> /1000 strokes : | + 1.0 |
| Check tolerance                 |       |
| cm <sup>3</sup> /1000S. :       | + 4.0 |
| Spreed                          |       |
| Tolerance                       |       |
| cm <sup>3</sup> /1000 strokes : | 8.0   |
| Check tolerance                 |       |
| cm <sup>3</sup> /1000S. :       | 12.0  |

RATED SPEED

|                    |        |
|--------------------|--------|
| control lever      |        |
| position degree :  | 109.0  |
| tolerance degree : | + 4.0  |
| <hr/>              |        |
| rack travel mm :   | 13.20  |
| Rated speed rpm :  | 1195   |
| Tolerance 1/min :  | + 5    |
| <hr/>              |        |
| rack travel mm :   | 4.00   |
| Rated speed rpm :  | 1300   |
| Tolerance 1/min :  | + 15   |
| <hr/>              |        |
| rack travel mm :   | 0.70   |
| Tolerance mm :     | + 0.70 |
| Rated speed rpm :  | 1400   |

LOW IDLE

|                    |       |
|--------------------|-------|
| control lever      |       |
| position degree :  | 65.0  |
| tolerance degree : | + 4.0 |

Testing:

Rated speed rpm : 350  
rack travel mm : 6.00  
Tolerance mm :  $\pm$  0.10

Rated speed rpm : 250  
CRT mm min. :  $>$  6.88

Rated speed rpm : 400

---

#### TORQUE CONTROL

Rated speed rpm : 1150  
rack travel mm : 14.20  
Tolerance mm :  $\pm$  0.05

Rated speed rpm : 950  
rack travel mm : 13.80  
Tolerance mm :  $\pm$  0.10

Rated speed rpm : 750  
rack travel mm : 13.20  
Tolerance mm :  $\pm$  0.10

Rated speed rpm : 600  
rack travel mm : 12.80  
Tolerance mm :  $\pm$  0.10

---

#### ANEROID/ALTITUDE COMPENSATOR TEST

##### SETTING

Rated speed rpm : 1150  
Pressure hPa : 1500  
rack travel mm : 14.20  
Tolerance mm :  $\pm$  0.05

##### MEASUREMENT

Pressure hPa : -  
Rated speed rpm : 1150  
rack travel mm : 11.00  
Tolerance mm :  $\pm$  0.15

Rated speed rpm : 1150

Pressure hPa : 850  
rack travel mm : 13.50  
Tolerance mm :  $\pm$  0.05

Pressure hPa : 350  
rack travel mm : 11.70  
Tolerance mm :  $\pm$  0.10

---

#### START CUT-OUT

Rated speed rpm :  $<$  270  
Check  
speed 1/min :  $<$  290

---

#### FUEL DELIVERY CHARACTERISTICS

Aneroid pressure  
hPa : 1500  
Rated speed rpm : 750  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 262.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  2.0  
Check tolerance  
cm<sup>3</sup>/1000s. :  $\pm$  5.0  
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0  
Check tolerance  
cm<sup>3</sup>/1000s. : 12.0

Aneroid pressure  
hPa : 1500  
Rated speed rpm : 600  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 256.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  3.0  
Check tolerance  
cm<sup>3</sup>/1000s. :  $\pm$  6.0

Aneroid pressure  
hPa : -  
Rated speed rpm : 500  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 166.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  1.0  
Check tolerance  
cm<sup>3</sup>/1000s. :  $\pm$  4.0

---

#### BREAKAWAY

Rack travel in mm : 13.20  
Rated speed rpm : 1195  
Tolerance 1/min :  $\pm$  5

---

#### STARTING FUEL DELIVERY

Rated speed rpm : 100  
rack travel mm : 13.70

Tolerance mm :  $\pm$  0.20  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 158.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  15.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  19.0

---

LOW IDLE

Rated speed rpm : 350  
rack travel mm : 8.00  
Tolerance mm :  $\pm$  0.30  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 13.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  3.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  6.0  
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 4.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 8.0

---

End of test specification sheet



# BOSCH INJ. PUMP TEST SPECIFICATIONS

## Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 22.09.95  
Test oil : ISO 4113  
  
Combination No. : 0 402 746 956  
  
Injection pump  
Pump designation : PES6P120A720RS7292  
: -1  
EP type number : 0 412 726 939  
  
Governor  
Governor design. : RQV350...1150PA1074  
: -1K  
Governor no. : 0 421 815 365  
  
Cust. part No. : 0250740902

Customer-spec. information  
Customer : MB-NFZ  
Motor : OM366LA  
Power kW : 142.0

## TEST BENCH REQUIREMENTS

Inlet line : 4.1  
  
Test oil inlet  
temp. °C : 40  
Tolerance °C : ± 2.0  
  
Overflow valve : 1 417 413 047  
  
Inlet press. bar : 1.5  
Tolerance bar : ± 0.1  
  
Overflow quantity  
min. l/h : 100  
Tolerance l/h : ± 10.0  
  
Test nozzle holder  
assembly : 1 688 901 105  
  
Opening pressure  
bar : 208.5

009

Tolerance bar : ± 1.5

Test lines : 1 680 750 075

Outside diameter : 8.0

x inside diameter : 3.0

x length mm : 1000

## REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

## BEGINNING OF DELIVERY

Test pressure bar : 26.0  
Tolerance bar : ± 1.0

Prestroke mm : 4.00  
Tolerance mm : ± 0.05

test only : ± 0.10

Rack travel in mm : 20.50  
Tolerance mm : ± 0.50

Firing order : 1- 5- 3- 6- 2-  
: 4

Phasing : 0-60-120-180-240  
: -300

Tolerance : ± 0.30

Check  
tolerance °NW : ± 0.50

## Start of delivery blocking

°NW after s.o.d. : 3.30

Barrel no. : 1

## BASIC SETTING

Rated speed rpm : 1150

Rack travel in mm : 14.50

Tolerance mm :  $\pm$  0.05

Del. quantity  
cm<sup>3</sup>/1000 strokes : 277.0

Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  1.0

Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  4.0

Spread  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0

Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

Rated speed rpm : 350

Rack travel in mm : 8.00  
Tolerance mm :  $\pm$  0.30

Del. quantity  
cm<sup>3</sup>/1000 strokes : 13.0

Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  3.0

Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  6.0

Spread  
Tolerance  
cm<sup>3</sup>/1000 strokes : 4.0

Check tolerance  
cm<sup>3</sup>/1000S. : 8.0

#### (B) SETTING OF INJECTION PUMP WITH GOVERNOR

##### GUIDE SLEEVE TRAVEL

Rated speed rpm : 350  
guide sleeve  
travel mm : 1.53  
Tolerance mm :  $\pm$  0.20

Rated speed rpm : 1206  
guide sleeve  
travel mm : 9.35  
Tolerance mm :  $\pm$  0.15

Rated speed rpm : 855  
guide sleeve  
travel mm : 5.56  
Tolerance mm :  $\pm$  0.25

Rated speed rpm : 540  
guide sleeve  
travel mm : 3.09  
Tolerance mm :  $\pm$  0.25

Rated speed rpm : 1480  
guide sleeve  
travel mm : 13.50  
Tolerance mm :  $\pm$  0.50

##### GUIDE SLEEVE POSITION

Rated speed rpm : 1331

Rack travel in mm : 13.50  
Tolerance mm :  $\pm$  1.30

##### FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1150  
Aneroid pressure  
hPa : 1500  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 277.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  1.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  4.0  
Spread  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

##### RATED SPEED

control lever  
position degree : 109.0  
tolerance degree :  $\pm$  4.0

rack travel mm : 13.50  
Rated speed rpm : 1195  
Tolerance 1/min :  $\pm$  5

rack travel mm : 4.00  
Rated speed rpm : 1305  
Tolerance 1/min :  $\pm$  15

rack travel mm : 0.70  
Tolerance mm :  $\pm$  0.70  
Rated speed rpm : 1400

##### LOW IDLE

control lever  
position degree : 65.0  
tolerance degree :  $\pm$  4.0

### Testing:

Rated speed rpm : 350  
rack travel mm : 6.00  
Tolerance mm :  $\pm$  0.10

Rated speed rpm : 250

CRT mm min. :  $>$  6.88

Rated speed rpm : 400

### TORQUE CONTROL

Rated speed rpm : 1150  
rack travel mm : 14.50  
Tolerance mm :  $\pm$  0.05

Rated speed rpm : 950  
rack travel mm : 14.30  
Tolerance mm :  $\pm$  0.10

Rated speed rpm : 750  
rack travel mm : 13.70  
Tolerance mm :  $\pm$  0.10

Rated speed rpm : 600  
rack travel mm : 13.30  
Tolerance mm :  $\pm$  0.10

### ANEROID/ALTITUDE COMPENSATOR TEST

#### SETTING

Rated speed rpm : 1150  
Pressure hPa : 1500  
rack travel mm : 14.50  
Tolerance mm :  $\pm$  0.05

#### MEASUREMENT

Pressure hPa : -  
Rated speed rpm : 1150  
rack travel mm : 10.90  
Tolerance mm :  $\pm$  0.15

Rated speed rpm : 1150

Pressure hPa : 850  
rack travel mm : 13.90  
Tolerance mm :  $\pm$  0.05

Pressure hPa : 350  
rack travel mm : 11.50  
Tolerance mm :  $\pm$  0.20

### START CUT-OUT

Rated speed rpm :  $<$  270

Check  
speed 1/min :  $<$  290

### FUEL DELIVERY CHARACTERISTICS

Aneroid pressure  
hPa : 1500  
Rated speed rpm : 750  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 281.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  2.0  
Check tolerance  
cm<sup>3</sup>/1000s. :  $\pm$  5.0  
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0  
Check tolerance  
cm<sup>3</sup>/1000s. : 12.0

Aneroid pressure  
hPa : 1500  
Rated speed rpm : 600  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 275.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  3.0  
Check tolerance  
cm<sup>3</sup>/1000s. :  $\pm$  6.0

Aneroid pressure  
hPa : -  
Rated speed rpm : 500  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 155.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  1.0  
Check tolerance  
cm<sup>3</sup>/1000s. :  $\pm$  4.0

### BREAKAWAY

Rack travel in mm : 13.50  
Rated speed rpm : 1195  
Tolerance 1/min :  $\pm$  5

### STARTING FUEL DELIVERY

Rated speed rpm : 100  
rack travel mm : 13.90

Tolerance mm :  $\pm$  0.20  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 170.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  15.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  19.0

---

#### LOW IDLE

Rated speed rpm : 350  
rack travel mm : 8.00  
Tolerance mm :  $\pm$  0.30  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 13.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  3.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  6.0  
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 4.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 8.0

---

End of test specification sheet

# BOSCH INJ. PUMP TEST SPECIFICATIONS

## Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 22.09.95  
Test oil : ISO 4113

Combination No. : 0 402 746 957

Injection pump  
Pump designation : PES6P120A72ORS7292  
: -1

EP type number : 0 412 726 939

Governor  
Governor design. : RQV350...1150PA1074  
: -2K

Governor no. : 0 421 815 367

Cust. part No. : 0250741002

Customer-spec. information  
Customer : MB-NFZ  
Motor : OM366LA  
Power KW : 157.0

## TEST BENCH REQUIREMENTS

Inlet line : 4.1

Test oil inlet  
temp. °C : 40  
Tolerance °C : ± 2.0

Overflow valve : 1 417 413 047

Inlet press. bar : 1.5  
Tolerance bar : ± 0.1

Overflow quantity  
min. l/h : 100  
Tolerance l/h : ± 10.0

Test nozzle holder  
assembly : 1 688 901 105

Opening pressure  
bar : 208.5

Tolerance bar : ± 1.5

Test lines : 1 680 750 075

Outside diameter : 8.0

x inside diameter : 3.0  
x length mm : 1000

## REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

## BEGINNING OF DELIVERY

Test pressure bar : 26.0  
Tolerance bar : ± 1.0

Prestroke mm : 4.00  
Tolerance mm : ± 0.05

test only : ± 0.10

Rack travel in mm : 20.50  
Tolerance mm : ± 0.50

Firing order : 1- 5- 3- 6- 2-  
: 4

Phasing : 0-60-120-180-240  
: -300

Tolerance : ± 0.30

Check  
tolerance °NW : ± 0.75

Start of delivery blocking

°NW after s.o.d. : 3.30

Barrel no. : 1

## BASIC SETTING

Rated speed rpm : 1150

Rack travel in mm : 14.40

Tolerance mm : + 0.05

Del. quantity  
cm<sup>3</sup>/1000 strokes : 280.0

Tolerance  
cm<sup>3</sup>/1000 strokes : + 1.0

Check tolerance  
cm<sup>3</sup>/1000S. : + 4.0

Speed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0

Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

Rated speed rpm : 350

Rack travel in mm : 8.00  
Tolerance mm : + 0.30

Del. quantity  
cm<sup>3</sup>/1000 strokes : 13.0

Tolerance  
cm<sup>3</sup>/1000 strokes : + 3.0

Check tolerance  
cm<sup>3</sup>/1000S. : + 6.0

Speed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 4.0

Check tolerance  
cm<sup>3</sup>/1000S. : 8.0

#### (B) SETTING OF INJECTION PUMP WITH GOVERNOR

##### GUIDE SLEEVE TRAVEL

Rated speed rpm : 350  
guide sleeve  
travel mm : 1.53  
Tolerance mm : + 0.20

Rated speed rpm : 1206  
guide sleeve  
travel mm : 9.35  
Tolerance mm : + 0.15

Rated speed rpm : 855  
guide sleeve  
travel mm : 5.56  
Tolerance mm : + 0.25

Rated speed rpm : 550  
guide sleeve  
travel mm : 3.17  
Tolerance mm : + 0.25

Rated speed rpm : 1480  
guide sleeve  
travel mm : 13.50  
Tolerance mm : + 0.50

##### GUIDE SLEEVE POSITION

Rated speed rpm : 1331

Rack travel in mm : 13.50  
Tolerance mm : + 1.30

##### FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1150  
Aneroid pressure  
hPa : 1500

Del. quantity  
cm<sup>3</sup>/1000 strokes : 280.0

Tolerance  
cm<sup>3</sup>/1000 strokes : + 1.0

Check tolerance  
cm<sup>3</sup>/1000S. : + 4.0

Speed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0

Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

##### RATED SPEED

control lever  
position degree : 109.0  
tolerance degree : + 4.0

rack travel mm : 13.40  
Rated speed rpm : 1195  
Tolerance 1/min : + 5

rack travel mm : 4.00  
Rated speed rpm : 1305  
Tolerance 1/min : + 15

rack travel mm : 0.70  
Tolerance mm : + 0.70  
Rated speed rpm : 1400

##### LOW IDLE

control lever  
position degree : 65.0  
tolerance degree : + 4.0

### Testing:

Rated speed rpm : 350  
rack travel mm : 6.00  
Tolerance mm :  $\pm$  0.10

Rated speed rpm : 250

CRT mm min. :  $>$  6.88

Rated speed rpm : 400

### TORQUE CONTROL

Rated speed rpm : 1150  
rack travel mm : 14.40  
Tolerance mm :  $\pm$  0.05

Rated speed rpm : 950  
rack travel mm : 14.25  
Tolerance mm :  $\pm$  0.10

Rated speed rpm : 750  
rack travel mm : 13.70  
Tolerance mm :  $\pm$  0.10

Rated speed rpm : 600  
rack travel mm : 13.20  
Tolerance mm :  $\pm$  0.10

### ANEROID/ALTITUDE COMPENSATOR TEST

#### SETTING

Rated speed rpm : 1150  
Pressure hPa : 1500  
rack travel mm : 14.40  
Tolerance mm :  $\pm$  0.05

#### MEASUREMENT

Pressure hPa : -  
Rated speed rpm : 1150  
rack travel mm : 10.50  
Tolerance mm :  $\pm$  0.15

Rated speed rpm : 1150

Pressure hPa : 1050  
rack travel mm : 13.70  
Tolerance mm :  $\pm$  0.05

Pressure hPa : 400  
rack travel mm : 11.30  
Tolerance mm :  $\pm$  0.15

### START CUT-OUT

Rated speed rpm :  $<$  270

Check  
speed 1/min :  $<$  290

### FUEL DELIVERY CHARACTERISTICS

Aneroid pressure  
hPa : 1500  
Rated speed rpm : 750  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 285.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  2.0  
Check tolerance  
cm<sup>3</sup>/1000s. :  $\pm$  5.0  
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0  
Check tolerance  
cm<sup>3</sup>/1000s. : 12.0

Aneroid pressure  
hPa : 1500  
Rated speed rpm : 600  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 277.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  3.0  
Check tolerance  
cm<sup>3</sup>/1000s. :  $\pm$  6.0

Aneroid pressure  
hPa : -  
Rated speed rpm : 500  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 143.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  1.0  
Check tolerance  
cm<sup>3</sup>/1000s. :  $\pm$  4.0

### BREAKAWAY

Rack travel in mm : 13.40  
Rated speed rpm : 1195  
Tolerance 1/min :  $\pm$  5

### STARTING FUEL DELIVERY

Rated speed rpm : 100  
rack travel mm : 13.80

Tolerance mm :  $\pm$  0.20  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 175.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  15.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  19.0

---

LOW IDLE

Rated speed rpm : 350  
rack travel mm : 8.00  
Tolerance mm :  $\pm$  0.30  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 13.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  3.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  6.0  
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 4.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 8.0

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End of test specification sheet



# BOSCH INJ. PUMP TEST SPECIFICATIONS

## Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 22.09.95  
Test oil : ISO 4113  
  
Combination No. : 0 402 746 959  
  
Injection pump  
Pump designation : PES6P120A720RS7292  
: -1  
EP type number : 0 412 726 939  
  
Governor  
Governor design. : RQV350...1150PA1104K  
Governor no. : 0 421 815 368

Cust. part No. : 0250741402

Customer-spec. information  
Customer : MB-NFZ  
Motor : OM366LA  
Power kW : 172.0

## TEST BENCH REQUIREMENTS

Inlet Line : 4.1  
  
Test oil inlet  
temp. °C : 40  
Tolerance °C : ± 2.0  
  
Overflow valve : 1 417 413 047  
  
Inlet press. bar : 1.5  
Tolerance bar : ± 0.1  
  
Overflow quantity  
min. l/h : 100  
Tolerance l/h : ± 10.0  
  
Test nozzle holder  
assembly : 1 688 901 105  
  
Opening pressure  
bar : 208.5  
Tolerance bar : ± 1.5

Test lines : 1 680 750 075

Outside diameter : 8.0

x inside diameter : 3.0

x length mm : 1000

## REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

## BEGINNING OF DELIVERY

Test pressure bar : 26.0  
Tolerance bar : ± 1.0

Prestroke mm : 4.00  
Tolerance mm : ± 0.05

test only : ± 0.10

Rack travel in mm : 20.50  
Tolerance mm : ± 0.50

Firing order : 1- 5- 3- 6- 2-  
: 4

Phasing : 0-60-120-180-240  
: -300

Tolerance : ± 0.30  
Check  
tolerance \*NW : ± 0.50

## Start of delivery blocking

\*NW after s.o.d. : 3.30

Barrel no. : 1

## BASIC SETTING

Rated speed rpm : 1150

Rack travel in mm : 14.40  
Tolerance mm : ± 0.05

Del. quantity  
cm<sup>3</sup>/1000 strokes : 280.0

Tolerance  
cm<sup>3</sup>/1000 strokes : ± 1.0

Check tolerance  
cm<sup>3</sup>/1000S. : ± 4.0

Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0

Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

Rated speed rpm : 350

Rack travel in mm : 8.00  
Tolerance mm : ± 0.30

Del. quantity  
cm<sup>3</sup>/1000 strokes : 13.0

Tolerance  
cm<sup>3</sup>/1000 strokes : ± 3.0

Check tolerance  
cm<sup>3</sup>/1000S. : ± 6.0

Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 4.0

Check tolerance  
cm<sup>3</sup>/1000S. : 8.0

#### (B) SETTING OF INJECTION PUMP WITH GOVERNOR

##### GUIDE SLEEVE TRAVEL

Rated speed rpm : 350  
guide sleeve  
travel mm : 1.53  
Tolerance mm : ± 0.20

Rated speed rpm : 1205  
guide sleeve  
travel mm : 9.35  
Tolerance mm : ± 0.15

Rated speed rpm : 855  
guide sleeve  
travel mm : 5.56  
Tolerance mm : ± 0.25

Rated speed rpm : 540  
guide sleeve  
travel mm : 3.09  
Tolerance mm : ± 0.25

Rated speed rpm : 1480

guide sleeve  
travel mm : 13.50  
Tolerance mm : ± 0.50

##### GUIDE SLEEVE POSITION

Rated speed rpm : 1329

Rack travel in mm : 13.25  
Tolerance mm : ± 1.30

##### FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1150  
Aneroid pressure  
hPa : 1500

Del. quantity  
cm<sup>3</sup>/1000 strokes : 280.0

Tolerance  
cm<sup>3</sup>/1000 strokes : ± 1.0

Check tolerance  
cm<sup>3</sup>/1000S. : ± 4.0

Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0

Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

##### RATED SPEED

control lever  
position degree : 109.0  
tolerance degree : ± 4.0

rack travel mm : 13.40  
Rated speed rpm : 1195  
Tolerance 1/min : ± 5

rack travel mm : 4.00  
Rated speed rpm : 1300  
Tolerance 1/min : ± 15

rack travel mm : 0.70  
Tolerance mm : ± 0.70  
Rated speed rpm : 1400

##### LOW IDLE

control lever  
position degree : 65.0  
tolerance degree : ± 4.0

Testing:

Rated speed rpm : 350  
rack travel mm : 6.00  
Tolerance mm :  $\pm$  0.10

Rated speed rpm : 250

CRT mm min. :  $>$  6.88

Rated speed rpm : 400

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#### TORQUE CONTROL

Rated speed rpm : 1150  
rack travel mm : 14.40  
Tolerance mm :  $\pm$  0.05

Rated speed rpm : 950  
rack travel mm : 14.40  
Tolerance mm :  $\pm$  0.10

Rated speed rpm : 750  
rack travel mm : 13.90  
Tolerance mm :  $\pm$  0.10

Rated speed rpm : 600  
rack travel mm : 13.40  
Tolerance mm :  $\pm$  0.10

---

#### ANEROID/ALTITUDE COMPENSATOR TEST

##### SETTING

Rated speed rpm : 1150  
Pressure hPa : 1500  
rack travel mm : 14.40  
Tolerance mm :  $\pm$  0.05

##### MEASUREMENT

Pressure hPa : -  
Rated speed rpm : 1150  
rack travel mm : 10.40  
Tolerance mm :  $\pm$  0.15

Rated speed rpm : 1150

Pressure hPa : 1050  
rack travel mm : 13.60  
Tolerance mm :  $\pm$  0.05

Pressure hPa : 450  
rack travel mm : 11.30  
Tolerance mm :  $\pm$  0.10

---

#### START CUT-OUT

Rated speed rpm :  $<$  270  
Check  
speed 1/min :  $<$  290

---

#### FUEL DELIVERY CHARACTERISTICS

Aneroid pressure  
hPa : 1500  
Rated speed rpm : 750  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 290.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  2.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  5.0  
Spread  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

Aneroid pressure  
hPa : 1500  
Rated speed rpm : 600  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 283.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  3.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  6.0

Aneroid pressure  
hPa : -  
Rated speed rpm : 500  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 134.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  1.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  4.0

---

#### BREAKAWAY

Rack travel in mm : 13.40  
Rated speed rpm : 1195  
Tolerance 1/min :  $\pm$  5

---

#### STARTING FUEL DELIVERY

Rated speed rpm : 100  
rack travel mm : 13.60  
Tolerance mm :  $\pm$  0.20  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 155.0

Tolerance  
cm<sup>3</sup>/1000 strokes : ± 15.0  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 19.0

---

LOW IDLE

Rated speed rpm : 350  
rack travel mm : 8.00  
Tolerance mm : ± 0.30  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 13.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 3.0  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 6.0  
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 4.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 8.0

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End of test specification sheet

# BOSCH INJ. PUMP TEST SPECIFICATIONS

## Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 22.09.95  
Test oil : ISO 4113

Combination No. : 0 402 746 960

Injection pump  
Pump designation : PES6P120A720RS7292  
: -1  
EP type number : 0 412 726 939

Governor  
Governor design. : RQV350...1150PA1104  
: -1K  
Governor no. : 0 421 815 371

Cust. part No. : 0250741302

Customer-spec. information  
Customer : MB-NFZ  
Motor : OM366LA  
Power KW : 157.0

## TEST BENCH REQUIREMENTS

Inlet line : 4.1

Test oil inlet  
temp. °C : 40  
Tolerance °C : ± 2.0

Overflow valve : 1 417 413 047

Inlet press. bar : 1.5  
Tolerance bar : ± 0.1

Overflow quantity  
min. l/h : 100  
Tolerance l/h : ± 10.0

Test nozzle holder  
assembly : 1 688 901 105

Opening pressure  
bar : 208.5

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Tolerance bar : ± 1.5

Test lines : 1 680 750 075

Outside diameter : 8.0

x inside diameter : 3.0  
x length mm : 1000

## REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

## BEGINNING OF DELIVERY

Test pressure bar : 26.0  
Tolerance bar : ± 1.0

Prestroke mm : 4.00  
Tolerance mm : ± 0.05

test only : ± 0.10

Rack travel in mm : 20.50  
Tolerance mm : ± 0.50

Firing order : 1- 5- 3- 6- 2-  
: 4

Phasing : 0-60-120-180-240  
: -300

Tolerance : ± 0.30  
Check  
tolerance °NW : ± 0.50

Start of delivery blocking

\*NW after s.o.d. : 3.30

Barrel no. : 1

## BASIC SETTING

Rated speed rpm : 1150

Rack travel in mm : 14.40

Tolerance mm :  $\pm$  0.05

Del. quantity  
cm<sup>3</sup>/1000 strokes : 280.0

Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  1.0

Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  4.0

Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0

Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

Rated speed rpm : 350

Rack travel in mm : 8.00  
Tolerance mm :  $\pm$  0.30

Del. quantity  
cm<sup>3</sup>/1000 strokes : 13.0

Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  3.0

Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  6.0

Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 4.0

Check tolerance  
cm<sup>3</sup>/1000S. : 8.0

#### (B) SETTING OF INJECTION PUMP WITH GOVERNOR

##### GUIDE SLEEVE TRAVEL

Rated speed rpm : 350  
guide sleeve  
travel mm : 1.53  
Tolerance mm :  $\pm$  0.20

Rated speed rpm : 1206  
guide sleeve  
travel mm : 9.35  
Tolerance mm :  $\pm$  0.15

Rated speed rpm : 855  
guide sleeve  
travel mm : 5.56  
Tolerance mm :  $\pm$  0.25

Rated speed rpm : 540  
guide sleeve  
travel mm : 3.09  
Tolerance mm :  $\pm$  0.25

Rated speed rpm : 1480  
guide sleeve  
travel mm : 13.50  
Tolerance mm :  $\pm$  0.50

##### GUIDE SLEEVE POSITION

Rated speed rpm : 1331

Rack travel in mm : 13.40  
Tolerance mm :  $\pm$  1.30

##### FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1150  
Aneroid pressure  
hPa : 1500

Del. quantity  
cm<sup>3</sup>/1000 strokes : 280.0

Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  1.0

Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  4.0

Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0

Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

##### RATED SPEED

control lever  
position degree : 109.0  
tolerance degree :  $\pm$  4.0

rack travel mm : 13.40  
Rated speed rpm : 1195  
Tolerance 1/min :  $\pm$  5

rack travel mm : 4.00  
Rated speed rpm : 1305  
Tolerance 1/min :  $\pm$  15

rack travel mm : 0.70  
Tolerance mm :  $\pm$  0.70  
Rated speed rpm : 1400

##### LOW IDLE

control lever  
position degree : 65.0  
tolerance degree :  $\pm$  4.0

## Testing:

Rated speed rpm : 350  
rack travel mm : 6.00  
Tolerance mm :  $\pm$  0.10

Rated speed rpm : 250

CRT mm min. :  $>$  6.88

Rated speed rpm : 400

## TORQUE CONTROL

Rated speed rpm : 1150  
rack travel mm : 14.40  
Tolerance mm :  $\pm$  0.05

Rated speed rpm : 950  
rack travel mm : 14.25  
Tolerance mm :  $\pm$  0.10

Rated speed rpm : 750  
rack travel mm : 13.70  
Tolerance mm :  $\pm$  0.10

Rated speed rpm : 600  
rack travel mm : 13.20  
Tolerance mm :  $\pm$  0.10

## ANEROID/ALTITUDE COMPENSATOR TEST

### SETTING

Rated speed rpm : 1150  
Pressure hPa : 1500  
rack travel mm : 14.40  
Tolerance mm :  $\pm$  0.05

### MEASUREMENT

Pressure hPa : -  
Rated speed rpm : 1150  
rack travel mm : 10.50  
Tolerance mm :  $\pm$  0.15

Rated speed rpm : 1150

Pressure hPa : 1050  
rack travel mm : 13.70  
Tolerance mm :  $\pm$  0.05

Pressure hPa : 400  
rack travel mm : 11.30  
Tolerance mm :  $\pm$  0.15

## START CUT-OUT

Rated speed rpm :  $<$  270  
Check  
speed 1/min :  $<$  290

## FUEL DELIVERY CHARACTERISTICS

Aneroid pressure  
hPa : 1500  
Rated speed rpm : 750  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 285.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  2.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  5.0  
Spread  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

Aneroid pressure  
hPa : 1500  
Rated speed rpm : 600  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 277.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  3.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  6.0

Aneroid pressure  
hPa : -  
Rated speed rpm : 500  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 143.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  1.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  4.0

## BREAKAWAY

Rack travel in mm : 13.40  
Rated speed rpm : 1195  
Tolerance 1/min :  $\pm$  5

## STARTING FUEL DELIVERY

Rated speed rpm : 100  
rack travel mm : 13.80

Tolerance mm :  $\pm$  0.20  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 175.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  15.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  19.0

---

#### LOW IDLE

Rated speed rpm : 350  
rack travel mm : 8.00  
Tolerance mm :  $\pm$  0.30  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 13.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  3.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  6.0  
Speed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 4.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 8.0

---

End of test specification sheet



# BOSCH INJ. PUMP TEST SPECIFICATIONS

## Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 22.09.95  
Test oil : ISO 4113

Combination No. : 0 402 746 961

Injection pump  
Pump designation : PES6P120A720RS7292  
: -1  
EP type number : 0 412 726 939

Governor  
Governor design. : RQV350...1150PA1104  
: -2K  
Governor no. : 0 421 815 372

Cust. part No. : 0250741202

Customer-spec. information  
Customer : MB-NFZ  
Motor : OM366LA  
Power KW : 142.0

## TEST BENCH REQUIREMENTS

Inlet line : 4.1

Test oil inlet  
temp. °C : 40  
Tolerance °C : ± 2.0

Overflow valve : 1 417 413 047

Inlet press. bar : 1.5  
Tolerance bar : ± 0.1

Overflow quantity  
min. L/h : 100  
Tolerance L/h : ± 10.0

Test nozzle holde  
assembly : 1 688 901 105

Opening pressure  
bar : 208.5

D25

Tolerance bar : ± 1.5

Test lines : 1 680 750 075

Outside diameter : 8.0

x inside diameter : 3.0  
x length mm : 1000

## REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

## BEGINNING OF DELIVERY

Test pressure bar : 26.0  
Tolerance bar : ± 1.0

Prestroke mm : 4.00  
Tolerance mm : ± 0.05

test only : ± 0.10

Rack travel in mm : 20.50  
Tolerance mm : ± 0.50

Firing order : 1- 5- 3- 6- 2-  
: 4

Phasing : 0-60-120-180-240  
: -300

Tolerance : ± 0.30  
Check  
tolerance °NW : ± 0.50

## Start of delivery blocking

°NW after s.o.d. : 3.30

Barrel no. : 1

## BASIC SETTING

Rated speed rpm : 1150

Rack travel in mm : 14.50

Tolerance mm :  $\pm$  0.05

Del. quantity  
cm<sup>3</sup>/1000 strokes : 277.0

Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  1.0

Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  4.0

Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0

Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

Rated speed rpm : 350

Rack travel in mm : 8.00  
Tolerance mm :  $\pm$  0.30

Del. quantity  
cm<sup>3</sup>/1000 strokes : 13.0

Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  3.0

Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  6.0

Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 4.0

Check tolerance  
cm<sup>3</sup>/1000S. : 8.0

#### (B) SETTING OF INJECTION PUMP WITH GOVERNOR

##### GUIDE SLEEVE TRAVEL

Rated speed rpm : 350  
guide sleeve  
travel mm : 1.53  
Tolerance mm :  $\pm$  0.20

Rated speed rpm : 1206  
guide sleeve  
travel mm : 9.35  
Tolerance mm :  $\pm$  0.15

Rated speed rpm : 855  
guide sleeve  
travel mm : 5.56  
Tolerance mm :  $\pm$  0.25

Rated speed rpm : 540  
guide sleeve  
travel mm : 3.09  
Tolerance mm :  $\pm$  0.25

Rated speed rpm : 1480  
guide sleeve  
travel mm : 13.50  
Tolerance mm :  $\pm$  0.50

##### GUIDE SLEEVE POSITION

Rated speed rpm : 1331  
Rack travel in mm : 13.50  
Tolerance mm :  $\pm$  1.30

##### FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1150  
Aneroid pressure  
hPa : 1500  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 277.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  1.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  4.0  
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

##### RATED SPEED

control lever  
position degree : 108.0  
tolerance degree :  $\pm$  4.0

rack travel mm : 13.50  
Rated speed rpm : 1195  
Tolerance 1/min :  $\pm$  5

rack travel mm : 4.00  
Rated speed rpm : 1305  
Tolerance 1/min :  $\pm$  15

rack travel mm : 0.70  
Tolerance mm :  $\pm$  0.70  
Rated speed rpm : 1400

##### LOW IDLE

control lever  
position degree : 70.0  
tolerance degree :  $\pm$  4.0

## Testing:

Rated speed rpm : 350  
rack travel mm : 6.00  
Tolerance mm :  $\pm$  0.10

Rated speed rpm : 250

CRT mm min. :  $>$  7.00

Rated speed rpm : 400

## TORQUE CONTROL

Rated speed rpm : 1150  
rack travel mm : 14.50  
Tolerance mm :  $\pm$  0.05

Rated speed rpm : 950  
rack travel mm : 14.30  
Tolerance mm :  $\pm$  0.10

Rated speed rpm : 750  
rack travel mm : 13.70  
Tolerance mm :  $\pm$  0.10

Rated speed rpm : 600  
rack travel mm : 13.30  
Tolerance mm :  $\pm$  0.10

## ANEROID/ALTITUDE COMPENSATOR TEST

### SETTING

Rated speed rpm : 1150  
Pressure hPa : 1500  
rack travel mm : 14.50  
Tolerance mm :  $\pm$  0.05

### MEASUREMENT

Pressure hPa : -  
Rated speed rpm : 1150  
rack travel mm : 10.90  
Tolerance mm :  $\pm$  0.15

Rated speed rpm : 1150

Pressure hPa : 850  
rack travel mm : 13.90  
Tolerance mm :  $\pm$  0.05

Pressure hPa : 350  
rack travel mm : 11.50  
Tolerance mm :  $\pm$  0.20

## START CUT-OUT

Rated speed rpm :  $<$  270  
Check  
speed 1/min :  $<$  290

## FUEL DELIVERY CHARACTERISTICS

Aneroid pressure  
hPa : 1500  
Rated speed rpm : 750  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 281.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  2.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  5.0  
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

Aneroid pressure  
hPa : 1500  
Rated speed rpm : 600  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 275.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  3.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  6.0

Aneroid pressure  
hPa : -  
Rated speed rpm : 500  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 155.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  1.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  4.0

## BREAKAWAY

Rack travel in mm : 13.50  
Rated speed rpm : 1195  
Tolerance 1/min :  $\pm$  5

## STARTING FUEL DELIVERY

Rated speed rpm : 100  
rack travel mm : 13.90

Tolerance mm :  $\pm$  0.20  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 170.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  15.0  
Check tolerance  
cm<sup>3</sup>/1000s. :  $\pm$  19.0

---

LOW IDLE

Rated speed rpm : 350  
rack travel mm : 8.00  
Tolerance mm :  $\pm$  0.30  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 13.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  3.0  
Check tolerance  
cm<sup>3</sup>/1000s. :  $\pm$  6.0  
Speed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 4.0  
Check tolerance  
cm<sup>3</sup>/1000s. : 8.0

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End of test specification sheet

# BOSCH INJ. PUMP TEST SPECIFICATIONS

## Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 22.09.95  
Test oil : ISO 4113

Combination No. : 0 402 746 962

Injection pump  
Pump designation : PES6P120A720RS7292  
: -1  
EP type number : 0 412 726 939

Governor  
Governor design. : RQV350...1150PA1104  
: -3K  
Governor no. : 0 421 815 373

Cust. part No. : 0250741102

## Customer-spec. information

Customer : MB-NFZ  
Motor : OM366LA  
Power KW : 127.0

## TEST BENCH REQUIREMENTS

Inlet line : 4.1

Test oil inlet  
temp. °C : 40  
Tolerance °C : ± 2.0

Overflow valve : 1 417 413 047

Inlet press. bar : 1.5  
Tolerance bar : ± 0.1

Overflow quantity  
min. L/h : 100  
Tolerance L/h : ± 10.0

Test nozzle holder  
assembly : 1 688 901 105

Opening pressure  
bar : 208.5

E01

Tolerance bar : ± 1.5

Test lines : 1 680 750 075

Outside diameter : 8.0

x inside diameter : 3.0  
x length mm : 1000

## REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

## BEGINNING OF DELIVERY

Test pressure bar : 26.0  
Tolerance bar : ± 1.0

Prestroke mm : 4.00  
Tolerance mm : ± 0.05

test only : ± 0.10

Rack travel in mm : 20.50  
Tolerance mm : ± 0.50

Firing order : 1- 5- 3- 6- 2-  
: 4

Phasing : 0-60-120-180-240  
: -300

Tolerance : ± 0.30  
Check  
tolerance °NW : ± 0.50

Start of delivery blocking

°NW after s.o.d. : 3.30

Barrel no. : 1

## BASIC SETTING

Rated speed rpm : 1150

Rack travel in mm : 14.20  
Tolerance mm : ± 0.05

|                                 |        |
|---------------------------------|--------|
| <hr/>                           |        |
| Del. quantity                   |        |
| cm <sup>3</sup> /1000 strokes : | 271.0  |
| <hr/>                           |        |
| Tolerance                       |        |
| cm <sup>3</sup> /1000 strokes : | ± 1.0  |
| <hr/>                           |        |
| Check tolerance                 |        |
| cm <sup>3</sup> /1000S. :       | ± 4.0  |
| <hr/>                           |        |
| Spreed                          |        |
| Tolerance                       |        |
| cm <sup>3</sup> /1000 strokes : | 8.0    |
| <hr/>                           |        |
| Check tolerance                 |        |
| cm <sup>3</sup> /1000S. :       | 12.0   |
| <hr/>                           |        |
| Rated speed rpm :               | 350    |
| <hr/>                           |        |
| Rack travel in mm :             | 8.00   |
| Tolerance mm :                  | ± 0.30 |
| Del. quantity                   |        |
| cm <sup>3</sup> /1000 strokes : | 13.0   |
| Tolerance                       |        |
| cm <sup>3</sup> /1000 strokes : | ± 3.0  |
| Check tolerance                 |        |
| cm <sup>3</sup> /1000S. :       | ± 6.0  |
| Spreed                          |        |
| Tolerance                       |        |
| cm <sup>3</sup> /1000 strokes : | 4.0    |
| Check tolerance                 |        |
| cm <sup>3</sup> /1000S. :       | 8.0    |

(B) SETTING OF INJECTION PUMP  
WITH GOVERNOR

GUIDE SLEEVE TRAVEL

|                   |        |
|-------------------|--------|
| Rated speed rpm : | 350    |
| guide sleeve      |        |
| travel mm :       | 1.53   |
| Tolerance mm :    | ± 0.20 |
| <hr/>             |        |
| Rated speed rpm : | 1205   |
| guide sleeve      |        |
| travel mm :       | 9.35   |
| Tolerance mm :    | ± 0.15 |
| <hr/>             |        |
| Rated speed rpm : | 855    |
| guide sleeve      |        |
| travel mm :       | 5.56   |
| Tolerance mm :    | ± 0.25 |
| <hr/>             |        |
| Rated speed rpm : | 540    |
| guide sleeve      |        |
| travel mm :       | 3.09   |
| Tolerance mm :    | ± 0.25 |

|                   |        |
|-------------------|--------|
| Rated speed rpm : | 1480   |
| guide sleeve      |        |
| travel mm :       | 13.50  |
| Tolerance mm :    | ± 0.50 |

GUIDE SLEEVE POSITION

|                     |        |
|---------------------|--------|
| Rated speed rpm :   | 1329   |
| Rack travel in mm : | 13.20  |
| Tolerance mm :      | ± 1.30 |

FULL LOAD DELIVERY AT FULL LOAD STOP

|                                 |       |
|---------------------------------|-------|
| Rated speed rpm :               | 1150  |
| Aneroid pressure                |       |
| hPa :                           | 1500  |
| Del. quantity                   |       |
| cm <sup>3</sup> /1000 strokes : | 271.0 |
| Tolerance                       |       |
| cm <sup>3</sup> /1000 strokes : | ± 1.0 |
| Check tolerance                 |       |
| cm <sup>3</sup> /1000S. :       | ± 4.0 |
| Spreed                          |       |
| Tolerance                       |       |
| cm <sup>3</sup> /1000 strokes : | 8.0   |
| Check tolerance                 |       |
| cm <sup>3</sup> /1000S. :       | 12.0  |

RATED SPEED

|                    |        |
|--------------------|--------|
| control lever      |        |
| position degree :  | 109.0  |
| tolerance degree : | ± 4.0  |
| <hr/>              |        |
| rack travel mm :   | 13.20  |
| Rated speed rpm :  | 1195   |
| Tolerance 1/min :  | ± 5    |
| <hr/>              |        |
| rack travel mm :   | 4.00   |
| Rated speed rpm :  | 1300   |
| Tolerance 1/min :  | ± 15   |
| <hr/>              |        |
| rack travel mm :   | 0.70   |
| Tolerance mm :     | ± 0.70 |
| Rated speed rpm :  | 1400   |

LOW IDLE

|                    |       |
|--------------------|-------|
| control lever      |       |
| position degree :  | 65.0  |
| tolerance degree : | ± 4.0 |

Testing:

Rated speed rpm : 350  
rack travel mm : 6.00  
Tolerance mm :  $\pm$  0.10

Rated speed rpm : 250  
CRT mm min. :  $>$  7.00

Rated speed rpm : 400

---

#### TORQUE CONTROL

Rated speed rpm : 1150  
rack travel mm : 14.20  
Tolerance mm :  $\pm$  0.05

Rated speed rpm : 950  
rack travel mm : 13.80  
Tolerance mm :  $\pm$  0.10

Rated speed rpm : 750  
rack travel mm : 13.20  
Tolerance mm :  $\pm$  0.10

Rated speed rpm : 600  
rack travel mm : 12.80  
Tolerance mm :  $\pm$  0.10

---

#### ANEROID/ALTITUDE COMPENSATOR TEST

##### SETTING

Rated speed rpm : 1150  
Pressure hPa : 1500  
rack travel mm : 14.20  
Tolerance mm :  $\pm$  0.05

##### MEASUREMENT

Pressure hPa : -  
Rated speed rpm : 1150  
rack travel mm : 11.00  
Tolerance mm :  $\pm$  0.15

Rated speed rpm : 1150

Pressure hPa : 850  
rack travel mm : 13.50  
Tolerance mm :  $\pm$  0.05

Pressure hPa : 350  
rack travel mm : 11.70  
Tolerance mm :  $\pm$  0.10

---

#### START CUT-OUT

Rated speed rpm :  $<$  270  
Check  
speed 1/min :  $<$  290

---

#### FUEL DELIVERY CHARACTERISTICS

Aneroid pressure  
hPa : 1500  
Rated speed rpm : 750  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 262.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  2.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  5.0  
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

Aneroid pressure  
hPa : 1500  
Rated speed rpm : 600  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 256.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  3.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  6.0

Aneroid pressure  
hPa : -  
Rated speed rpm : 500  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 166.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  1.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  4.0

---

#### BREAKAWAY

Rack travel in mm : 13.20  
Rated speed rpm : 1195  
Tolerance 1/min :  $\pm$  5

---

#### STARTING FUEL DELIVERY

Rated speed rpm : 100  
rack travel mm : 13.70

Tolerance mm :  $\pm$  0.20  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 158.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  15.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  19.0

---

#### LOW IDLE

Rated speed rpm : 350  
rack travel mm : 8.00  
Tolerance mm :  $\pm$  0.30  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 13.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  3.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  6.0  
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 4.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 8.0

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End of test specification sheet



# BOSCH INJ. PUMP TEST SPECIFICATIONS

## Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 12.09.95  
Test oil : ISO 4113  
  
Combination No. : 0 402 746 967  
  
Injection pump  
Pump designation : PES6P120A32ORS7324  
EP type number : 0 412 726 905

Governor  
Governor design. : RQ300/1200PA1132  
Governor no. : 0 421 801 708

Cust. part No. : 51.11103-7296

## Customer-spec. information

Customer : MAN  
Motor : D0826LF11/LFL03  
Power KW : 162.0

## TEST BENCH REQUIREMENTS

Inlet line : 4.2

Test oil inlet  
temp. °C : 40  
Tolerance °C : ± 2.0

Overflow valve : 1 417 413 025

Inlet press. bar : 2.0  
Tolerance bar : ± 0.1

Tolerance l/h : ± 10.0

Test nozzle holde  
assembly : 1 688 901 103

Opening pressure  
bar : 208.5  
Tolerance bar : ± 1.5

Test lines : 1 680 750 003

Outside diameter : 6.0  
x inside diameter : 2.0  
x length mm : 600

## REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

## BEGINNING OF DELIVERY

Test pressure bar : 26.0  
Tolerance bar : ± 1.0

Prestroke mm : 5.15  
Tolerance mm : ± 0.05

test only : ± 0.10

Rack travel in mm : 12.00  
Tolerance mm : ± 0.50

Firing order : 1- 5- 3- 6- 2-  
: 4

Phasing : 0-60-120-180-240  
: -300

Tolerance : ± 0.30  
Check  
tolerance °NW : ± 0.50

Start of delivery blocking

Barrel no. : 1

## BASIC SETTING

Rated speed rpm : 700

Rack travel in mm : 5.00  
Tolerance mm : ± 0.10

Del. quantity  
cm<sup>3</sup>/1000 strokes : 70.0

Tolerance  
cm<sup>3</sup>/1000 strokes : ± 8.0

Check tolerance  
cm<sup>3</sup>/1000S. : ± 11.0

Spread

Tolerance  
cm<sup>3</sup>/1000 strokes : 3.5

Check tolerance  
cm<sup>3</sup>/1000S. : 8.0

Rated speed rpm : 1000

Rack travel in mm : 12.45  
Tolerance mm : ± 0.05

Del. quantity  
cm<sup>3</sup>/1000 strokes : 200.0

Tolerance  
cm<sup>3</sup>/1000 strokes : ± 1.0

Check tolerance  
cm<sup>3</sup>/1000S. : ± 4.0

Spread

Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0

Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

Rated speed rpm : 300

Rack travel in mm : 5.20  
Tolerance mm : ± 0.20

Del. quantity  
cm<sup>3</sup>/1000 strokes : 27.0

Tolerance  
cm<sup>3</sup>/1000 strokes : ± 3.0

Check tolerance  
cm<sup>3</sup>/1000S. : ± 6.0

Spread

Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0

Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

(B) SETTING OF INJECTION PUMP  
WITH GOVERNOR

#### GUIDE SLEEVE TRAVEL

Rated speed rpm : 300  
guide sleeve  
travel mm : 1.41  
Tolerance mm : ± 0.10

Rated speed rpm : 1257  
guide sleeve  
travel mm : 6.37  
Tolerance mm : ± 0.10

Rated speed rpm : 1200  
guide sleeve  
travel mm : 6.00  
Tolerance mm : ± 0.10

Rated speed rpm : 425  
guide sleeve  
travel mm : 4.31  
Tolerance mm : ± 0.10

Rated speed rpm : 530  
guide sleeve  
travel mm : 6.00  
Tolerance mm : ± 0.10

Rated speed rpm : 1430  
guide sleeve  
travel mm : 11.50  
Tolerance mm : ± 0.50

#### GUIDE SLEEVE POSITION

Rated speed rpm : 600  
Rack travel in mm : 20.00  
Tolerance mm : ± 0.80

#### FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1000  
Aneroid pressure  
hPa : 1500  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 200.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 1.0  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 4.0  
Spread  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

#### RATED SPEED

control lever  
position degree : 97.0  
tolerance degree : ± 4.0

rack travel mm : 11.45  
Rated speed rpm : 1245  
Tolerance 1/min :  $\pm$  8

rack travel mm : 4.00  
Rated speed rpm : 1328  
Tolerance 1/min :  $\pm$  15

rack travel mm : 0.25  
Tolerance mm :  $\pm$  0.25  
Rated speed rpm : 1460

---

#### LOW IDLE

control lever  
position degree : 71.0  
tolerance degree :  $\pm$  4.0

#### Testing:

Rated speed rpm : 300  
rack travel mm : 5.20  
Tolerance mm :  $\pm$  0.10

rack travel mm : 2.00  
Rated speed rpm : 375  
Tolerance 1/min :  $\pm$  30

Rated speed rpm : 250

CRT mm min. :  $>$  6.50

---

#### TORQUE CONTROL

Rated speed rpm : 1000  
rack travel mm : 12.45  
Tolerance mm :  $\pm$  0.05

Rated speed rpm : 1200  
rack travel mm : 12.45  
Tolerance mm :  $\pm$  0.10

Rated speed rpm : 750  
rack travel mm : 12.45  
Tolerance mm :  $\pm$  0.10

---

#### ANEROID/ALTITUDE COMPENSATOR TEST

#### SETTING

Rated speed rpm : 500  
Pressure hPa : 1500  
rack travel mm : 12.45  
Tolerance mm :  $\pm$  0.05

#### MEASUREMENT

Pressure hPa : -  
Rated speed rpm : 500  
rack travel mm : 8.00  
Tolerance mm :  $\pm$  0.20

Rated speed rpm : 500

Pressure hPa : 140  
rack travel mm : 8.35  
Tolerance mm :  $\pm$  0.05

Pressure hPa : 700  
rack travel mm : 11.35  
Tolerance mm :  $\pm$  0.15

---

#### START CUT-OUT

Rated speed rpm :  $<$  220  
Check  
speed 1/min :  $<$  240

---

#### FUEL DELIVERY CHARACTERISTICS

Aneroid pressure  
hPa : 1500  
Rated speed rpm : 1200  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 193.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  3.0  
Check tolerance  
cm<sup>3</sup>/1000s. :  $\pm$  6.0

Aneroid pressure  
hPa : 1500  
Rated speed rpm : 750  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 204.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  3.0  
Check tolerance  
cm<sup>3</sup>/1000s. :  $\pm$  6.0

Aneroid pressure  
hPa : -  
Rated speed rpm : 500  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 129.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  1.0  
Check tolerance  
cm<sup>3</sup>/1000s. :  $\pm$  4.0

---

#### BREAKAWAY

Rack travel in mm : 11.45  
Rated speed rpm : 1245  
Tolerance 1/min : +- 8

---

#### STARTING FUEL DELIVERY

Rated speed rpm : 100  
rack travel mm : 13.00  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 189.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : +- 15.0  
Check tolerance  
cm<sup>3</sup>/1000S. : +- 19.0

---

#### LOW IDLE

Rated speed rpm : 300  
rack travel mm : 5.20  
Tolerance mm : +- 0.20  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 27.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : +- 3.0  
Check tolerance  
cm<sup>3</sup>/1000S. : +- 6.0  
Speed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

---

End of test specification sheet

# BOSCH INJ. PUMP TEST SPECIFICATIONS

## Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 22.08.95  
Test oil : ISO 4113

Combination No. : 0 402 846 059

Injection pump  
Pump designation : PE6P120A720RS8026  
EP type number : 0 412 826 027

Governor  
Governor design. : RQV200...950PA1091K  
Governor no. : 0 421 815 984

Cust. part No. : 1355081

Customer-spec. information  
Customer : SCANIA  
Motor : DSC1172

## TEST BENCH REQUIREMENTS

Inlet line : 4.2

Test oil inlet  
temp. °C : 40  
Tolerance °C : ± 2.0

Overflow valve : 1 417 413 025

Inlet press. bar : 2.5

Test nozzle holde  
assembly : 1 688 901 104

Opening pressure  
bar : 251.5  
Tolerance bar : ± 1.5

Test lines : 1 680 750 008

Outside diameter : 6.0

x inside diameter : 2.0

x length mm : 600

## REMARKS

Start-of-delivery setting with ROBO diaphragm.

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

## BEGINNING OF DELIVERY

Test pressure bar : 26.0  
Tolerance bar : ± 1.0

Prestroke mm : 3.25  
Tolerance mm : ± 0.05

test only : ± 0.10

Rack travel in mm : 10.50  
Tolerance mm : ± 1.50

Firing order : 1- 5- 3- 6- 2-  
: 4

Phasing : 0-60-120-180-240  
: -300

Tolerance : ± 0.50  
Check  
tolerance °NW : ± 0.75

Start of delivery mark

Barrel no. : 1

## BASIC SETTING

Rated speed rpm : 700

Rack travel in mm : 12.35  
Tolerance mm : ± 0.05

Del. quantity  
cm<sup>3</sup>/1000 strokes : 383.0

Tolerance  
cm<sup>3</sup>/1000 strokes : ± 1.0

Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  4.0

Spread  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0

Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

Rated speed rpm : 250

Rack travel in mm : 4.40  
Tolerance mm :  $\pm$  0.30

Del. quantity  
cm<sup>3</sup>/1000 strokes : 16.0  
Tolerance

cm<sup>3</sup>/1000 strokes :  $\pm$  3.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  6.0

Spread  
Tolerance  
cm<sup>3</sup>/1000 strokes : 4.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 8.0

#### (B) SETTING OF INJECTION PUMP WITH GOVERNOR

##### GUIDE SLEEVE TRAVEL

Rated speed rpm : 250  
guide sleeve  
travel mm : 1.26  
Tolerance mm :  $\pm$  0.20

Rated speed rpm : 1008  
guide sleeve  
travel mm : 9.87  
Tolerance mm :  $\pm$  0.15

Rated speed rpm : 800  
guide sleeve  
travel mm : 6.59  
Tolerance mm :  $\pm$  0.25

Rated speed rpm : 310  
guide sleeve  
travel mm : 2.00  
Tolerance mm :  $\pm$  0.25

Rated speed rpm : 360  
guide sleeve  
travel mm : 2.45  
Tolerance mm :  $\pm$  0.25

Rated speed rpm : 520

guide sleeve  
travel mm : 3.58  
Tolerance mm :  $\pm$  0.25

Rated speed rpm : 1200  
guide sleeve  
travel mm : 13.50  
Tolerance mm :  $\pm$  0.50

##### GUIDE SLEEVE POSITION

Rated speed rpm : 1060  
Rack travel in mm : 12.50  
Tolerance mm :  $\pm$  1.30

##### FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 700  
Aneroid pressure  
hPa : -  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 383.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  1.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  4.0  
Spread  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

##### RATED SPEED

control lever  
position degree : 65.0  
tolerance degree :  $\pm$  4.0

control lever  
position degree : 118.0  
tolerance degree :  $\pm$  4.0

rack travel mm : 12.50  
Rated speed rpm : 995  
Tolerance 1/min :  $\pm$  5

rack travel mm : 4.00  
Rated speed rpm : 1075  
Tolerance 1/min :  $\pm$  15

rack travel mm : 0.50  
Tolerance mm :  $\pm$  0.50  
Rated speed rpm : 1150

---

## LOW IDLE

control lever  
position degree : 71.0  
tolerance degree :  $\pm$  4.0

control lever  
position degree : 17.0  
tolerance degree :  $\pm$  4.0

## Testing:

Rated speed rpm : 250  
rack travel mm : 4.40  
Tolerance mm :  $\pm$  0.10

Rated speed rpm : 150

CRT mm min. :  $>$  5.40

Rated speed rpm : 325

---

## TORQUE CONTROL

Rated speed rpm : 700  
rack travel mm : 12.35  
Tolerance mm :  $\pm$  0.05

Rated speed rpm : 950  
rack travel mm : 13.50  
Tolerance mm :  $\pm$  0.10

Rated speed rpm : 300  
rack travel mm : 10.75  
Tolerance mm :  $\pm$  0.20

---

## ANEROID/ALTITUDE COMPENSATOR TEST

## SETTING

Rated speed rpm : 950  
Pressure hPa : 1500  
rack travel mm : 13.50  
Tolerance mm :  $\pm$  0.10

## MEASUREMENT

Pressure hPa : -  
Rated speed rpm : 950  
rack travel mm : 7.00  
Tolerance mm :  $\pm$  0.20

Rated speed rpm : 950

Pressure hPa : 520  
rack travel mm : 7.80  
Tolerance mm :  $\pm$  0.20

Pressure hPa : 800  
rack travel mm : 9.85  
Tolerance mm :  $\pm$  0.05

---

## FUEL DELIVERY CHARACTERISTICS

Aneroid pressure  
hPa : -  
Rated speed rpm : 950  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 384.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  4.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  6.0

Aneroid pressure  
hPa : -  
Rated speed rpm : 500  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 189.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  1.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  4.0

---

## BREAKAWAY

Rack travel in mm : 12.50  
Rated speed rpm : 995  
Tolerance 1/min :  $\pm$  5

---

## LOW IDLE

Rated speed rpm : 250  
rack travel mm : 4.40  
Tolerance mm :  $\pm$  0.30  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 16.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  3.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  6.0  
Speed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 4.0

Check tolerance  
cm<sup>3</sup>/1000S. : 8.0

---

End of test specification sheet



# BOSCH INJ. PUMP TEST SPECIFICATIONS

## Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 11.09.95  
Test oil : ISO 4113

Combination No. : 0 403 466 156

Injection pump  
Pump designation : PES6MW100/120RS1238  
EP type number : 0 413 406 237

Governor  
Governor design. : RSV450...1100MW2A374  
Governor no. : 0 420 085 257

Cust. part No. : 3926881

Customer-spec. information  
Customer : CDC  
Motor : 6 CT-830  
Power KW : 160.0

## TEST BENCH REQUIREMENTS

Test oil inlet  
temp. °C : 40  
Tolerance °C : ± 2.0

Overflow valve : 1 417 413 047

Inlet press. bar : 1.5

Test nozzle holder  
assembly : 1 688 901 101

Opening pressure  
bar : 208.5  
Tolerance bar : ± 1.5

Test lines : 1 680 750 014

Outside diameter : 6.0

x inside diameter : 2.0  
x length mm : 600

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## REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

## BEGINNING OF DELIVERY

Test pressure bar : 31.0  
Tolerance bar : ± 1.0

Prestroke mm : 2.80  
Tolerance mm : ± 0.05

test only : ± 0.10

Rack travel in mm : 10.50  
Tolerance mm : ± 1.50

Firing order : 1- 5- 3- 6- 2-  
: 4

Phasing : 0-60-120-180-240  
: -300

Tolerance : ± 0.50

Check  
tolerance °NW : ± 0.75

Start of delivery blocking

°NW after s.o.d. : 9.50

Barrel no. : 1

## BASIC SETTING

Rated speed rpm : 1100

Rack travel in mm : 11.90  
Tolerance mm : ± 0.05

Del. quantity  
cm<sup>3</sup>/1000 strokes : 143.0

Tolerance  
cm<sup>3</sup>/1000 strokes : ± 1.0

Check tolerance  
cm<sup>3</sup>/1000S. : ± 4.0

---

Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 4.0

---

Check tolerance  
cm<sup>3</sup>/1000S. : 7.5

Rated speed rpm : 450

Rack travel in mm : 5.30  
Tolerance mm : ± 0.30

Del. quantity  
cm<sup>3</sup>/1000 strokes : 12.0

Tolerance  
cm<sup>3</sup>/1000 strokes : ± 2.0

Check tolerance  
cm<sup>3</sup>/1000S. : ± 4.5

Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 3.5

Check tolerance  
cm<sup>3</sup>/1000S. : 5.5

#### (B) SETTING OF INJECTION PUMP WITH GOVERNOR

---

##### GUIDE SLEEVE POSITION

Rated speed rpm : 800

Rack travel in mm : 0.65  
Tolerance mm : ± 0.35

governor spring  
pre-tension  
click setting x : 4.75

---

##### FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1100  
Aneroid pressure  
hPa : 1100

Del. quantity  
cm<sup>3</sup>/1000 strokes : 143.0

Tolerance  
cm<sup>3</sup>/1000 strokes : ± 1.0

Check tolerance  
cm<sup>3</sup>/1000S. : ± 4.0

Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 4.0

Check tolerance  
cm<sup>3</sup>/1000S. : 7.5

---

##### RATED SPEED

control lever  
position degree : 104.0  
tolerance degree : ± 4.0

rack travel mm : 10.90  
Rated speed rpm : 1150  
Tolerance 1/min : ± 5

rack travel mm : 4.00  
Rated speed rpm : 1270  
Tolerance 1/min : ± 15

rack travel mm : 0.85  
Tolerance mm : ± 0.55  
Rated speed rpm : 1400

rack travel mm : 4.00  
Rated speed rpm : 1225

---

##### LOW IDLE

control lever  
position degree : 82.0  
tolerance degree : ± 4.0

##### Testing:

Rated speed rpm : 450  
rack travel mm : 5.30  
Tolerance mm : ± 0.10

Rated speed rpm : 100

CRT mm min. : > 19.50

---

##### TORQUE CONTROL

Rated speed rpm : 1100  
rack travel mm : 11.90  
Tolerance mm : ± 0.05

Rated speed rpm : 750  
rack travel mm : 12.40  
Tolerance mm : ± 0.10

---

##### ANEROID/ALTITUDE COMPENSATOR TEST

##### SETTING

Rated speed rpm : 500  
Pressure hPa : 1100  
rack travel mm : 12.45  
Tolerance mm :  $\pm$  0.05

#### MEASUREMENT

Pressure hPa : -  
Rated speed rpm : 500  
rack travel mm : 10.50  
Tolerance mm :  $\pm$  0.05

Rated speed rpm : 500

Pressure hPa : 850  
rack travel mm : 12.00  
Tolerance mm :  $\pm$  0.20

Pressure hPa : 625  
rack travel mm : 11.00  
Tolerance mm :  $\pm$  0.10

#### FUEL DELIVERY CHARACTERISTICS

Aneroid pressure  
hPa : 1100  
Rated speed rpm : 750  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 154.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  2.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  5.0  
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 6.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 9.0

Aneroid pressure  
hPa : -  
Rated speed rpm : 500  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 115.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  1.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  4.0

#### BREAKAWAY

Rack travel in mm : 10.90  
Rated speed rpm : 1150  
Tolerance 1/min :  $\pm$  5

#### STARTING FUEL DELIVERY

Rated speed rpm : 100  
rack travel mm : 20.00  
Tolerance mm :  $\pm$  1.00  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 170.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  10.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  13.0

#### LOW IDLE

Rated speed rpm : 450  
rack travel mm : 5.30  
Tolerance mm :  $\pm$  0.30  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 12.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  2.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  4.5  
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 3.5  
Check tolerance  
cm<sup>3</sup>/1000S. : 5.5

End of test specification sheet

# BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 11.09.95  
Test oil : ISO 4113

Combination No. : 0 403 466 168

Injection pump  
Pump designation : PES6MW100/120RS1238  
EP type number : 0 413 406 237

Governor  
Governor design. : RSV450...1000MW2A389  
Governor no. : G 420 085 269

Cust. part No. : 3929167

Customer-spec. information  
Customer : CDC  
Motor : 6 CT-830  
Power kW : 134.0

## TEST BENCH REQUIREMENTS

Inlet line : 3.1

Test oil inlet  
temp. °C : 40  
Tolerance °C : ± 2.0

Overflow valve : 1 417 413 047

Inlet press. bar : 1.5

Test nozzle holde  
assembly : 1 688 901 101

Opening pressure  
bar : 208.5  
Tolerance bar : ± 1.5

Test lines : 1 680 750 014

Outside diameter : 6.0

x inside diameter : 2.0  
x length mm : 600

## REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

## BEGINNING OF DELIVERY

Test pressure bar : 31.0  
Tolerance bar : ± 1.0

Prestroke mm : 2.80  
Tolerance mm : ± 0.05

test only : ± 0.10

Rack travel in mm : 10.50  
Tolerance mm : ± 1.50

Firing order : 1- 5- 3- 6- 2-  
: 4

Phasing : 0-60-120-180-240  
: -300

Tolerance : ± 0.50

Check  
tolerance °NW : ± 0.75

Start of delivery blocking

°NW after s.o.d. : 9.50

Barrel no. : 1

## BASIC SETTING

Rated speed rpm : 1000

Rack travel in mm : 11.60  
Tolerance mm : ± 0.05

Del. quantity  
cm<sup>3</sup>/1000 strokes : 126.0

Tolerance  
cm<sup>3</sup>/1000 strokes : ± 1.0

---

Check tolerance  
cm<sup>3</sup>/1000S. : + 4.0

---

Speed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 4.0

---

Check tolerance  
cm<sup>3</sup>/1000S. : 7.5

---

Rated speed rpm : 450

Rack travel in mm : 6.50  
Tolerance mm : + 0.30

Del. quantity  
cm<sup>3</sup>/1000 strokes : 28.0

Tolerance  
cm<sup>3</sup>/1000 strokes : +- 2.0

Check tolerance  
cm<sup>3</sup>/1000S. : +- 4.5

Speed  
Tolerance

cm<sup>3</sup>/1000 strokes : 3.5

Check tolerance  
cm<sup>3</sup>/1000S. : 5.5

#### (B) SETTING OF INJECTION PUMP WITH GOVERNOR

---

##### GUIDE SLEEVE POSITION

Rated speed rpm : 800

Rack travel in mm : 0.65  
Tolerance mm : + 0.35

governor spring  
pre-tension  
click setting x : 3.75

---

##### FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1000  
Aneroid pressure  
hPa : 1000

Del. quantity  
cm<sup>3</sup>/1000 strokes : 126.0

Tolerance  
cm<sup>3</sup>/1000 strokes : +- 1.0

Check tolerance  
cm<sup>3</sup>/1000S. : +- 4.0

Speed  
Tolerance

cm<sup>3</sup>/1000 strokes : 4.0

---

Check tolerance  
cm<sup>3</sup>/1000S. : 7.5

---

##### RATED SPEED

control lever  
position degree : 99.0  
tolerance degree : + 4.0

rack travel mm : 10.60  
Rated speed rpm : 1050  
Tolerance 1/min : + 5

rack travel mm : 4.00  
Rated speed rpm : 1155  
Tolerance 1/min : +- 15

rack travel mm : 0.85  
Tolerance mm : + 0.55  
Rated speed rpm : 1300

rack travel mm : 4.00  
Rated speed rpm : 1165

---

##### LOW IDLE

control lever  
position degree : 82.0  
tolerance degree : +- 4.0

##### Testing:

Rated speed rpm : 450  
rack travel mm : 6.50  
Tolerance mm : + 0.10

Rated speed rpm : 100

CRT mm min. : > 19.00

---

##### TORQUE CONTROL

Rated speed rpm : 1000  
rack travel mm : 11.60  
Tolerance mm : +- 0.05

Rated speed rpm : 750  
rack travel mm : 12.40  
Tolerance mm : +- 0.10

---

##### ANEROID/ALTITUDE COMPENSATOR TEST

## SETTING

Rated speed rpm : 500  
Pressure hPa : 1000  
rack travel mm : 12.40  
Tolerance mm :  $\pm 0.10$

## MEASUREMENT

Pressure hPa : -  
Rated speed rpm : 500  
rack travel mm : 11.40  
Tolerance mm :  $\pm 0.05$

Rated speed rpm : 500

Pressure hPa : 650  
rack travel mm : 12.10  
Tolerance mm :  $\pm 0.15$

Pressure hPa : 550  
rack travel mm : 11.70  
Tolerance mm :  $\pm 0.10$

## FUEL DELIVERY CHARACTERISTICS

Aneroid pressure  
hPa : 1000  
Rated speed rpm : 750  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 140.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm 2.0$   
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm 5.0$   
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 6.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 9.0

Aneroid pressure  
hPa : -  
Rated speed rpm : 500  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 118.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm 1.0$   
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm 4.0$

## BREAKAWAY

Rack travel in mm : 10.60  
Rated speed rpm : 1050  
Tolerance 1/min :  $\pm 5$

## STARTING FUEL DELIVERY

Rated speed rpm : 100  
rack travel mm : 20.00  
Tolerance mm :  $\pm 1.00$   
Del. quantity  
cm<sup>3</sup>/1000 strokes : 170.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm 10.0$   
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm 13.0$

## LOW IDLE

Rated speed rpm : 450  
rack travel mm : 6.50  
Tolerance mm :  $\pm 0.30$   
Del. quantity  
cm<sup>3</sup>/1000 strokes : 28.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm 2.0$   
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm 4.5$   
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 3.5  
Check tolerance  
cm<sup>3</sup>/1000S. : 5.5

End of test specification sheet

# BOSCH INJ. PUMP TEST SPECIFICATIONS

## Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 29.05.95  
Test oil : ISO 4113  
Combination No. : 0 400 836 018  
Injection pump  
Pump designation : PES6A80D410/3RS2527  
EP type number : 0 410 886 059  
Governor  
Governor design. : RQ275/1400AB798DL  
Governor no. : 0 420 202 239

Cust. part No. :

Customer-spec. information  
Customer : KHD  
Motor : F6L912  
Power kW : 88.3

## TEST BENCH REQUIREMENTS

Inlet line : 3.1  
Test oil inlet  
temp. °C : 40  
Tolerance °C : ± 2.0  
Overflow valve : 1 417 413 000  
Inlet press. bar : 1.0  
Test nozzle holder  
assembly : 0 681 343 009  
Opening pressure  
bar : 173.5  
Tolerance bar : ± 1.5  
Test lines : 1 680 750 014  
Outside diameter : 6.0

x inside diameter : 2.0  
x length mm : 600

## REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

## BEGINNING OF DELIVERY

Test pressure bar : 26.0  
Tolerance bar : ± 1.0  
Firing order : 1- 5- 3- 6- 2-  
: 4  
Phasing : 0-60-120-180-240  
: -300  
Tolerance : ± 0.50  
Check  
tolerance °NW : ± 0.75

## BASIC SETTING

Rated speed rpm : 1400  
Rack travel in mm : 11.65  
Tolerance mm : ± 0.05  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 65.5  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 0.5  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 2.0  
Speed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 2.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 3.5  
Rated speed rpm : 275  
Rack travel in mm : 5.45  
Tolerance mm : ± 0.10

Del. quantity  
 cm<sup>3</sup>/1000 strokes : 12.0  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : ± 3.0  
 Check tolerance  
 cm<sup>3</sup>/1000S. : ± 4.5  
 Spreed  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : 2.5  
 Check tolerance  
 cm<sup>3</sup>/1000S. : 4.0

(B) SETTING OF INJECTION PUMP  
 WITH GOVERNOR

GUIDE SLEEVE POSITION

Rated speed rpm : 650  
 Rack travel in mm : 16.00  
 Tolerance mm : ± 0.40

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1400  
 Aneroid pressure  
 hPa : -  
 Del. quantity  
 cm<sup>3</sup>/1000 strokes : 65.5  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : ± 0.5  
 Check tolerance  
 cm<sup>3</sup>/1000S. : ± 2.0  
 Spreed  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : 2.0  
 Check tolerance  
 cm<sup>3</sup>/1000S. : 3.5

RATED SPEED

rack travel mm : 10.60  
 Rated speed rpm : 1453  
 Tolerance 1/min : ± 8  
 rack travel mm : 4.00  
 Rated speed rpm : 1550  
 Tolerance 1/min : ± 15  
 rack travel mm : 0.50  
 Tolerance mm : ± 0.50  
 Rated speed rpm : 1650

LOW IDLE

E20

Testing:

Rated speed rpm : 275  
 rack travel mm : 5.45  
 Tolerance mm : ± 0.05  
 rack travel mm : 2.00  
 Rated speed rpm : 450  
 Tolerance 1/min : ± 20  
 Rated speed rpm : 100  
 CRT mm min. : > 7.00  
 Rated speed rpm : 600  
 CRT mm max. : < 1.00

TORQUE CONTROL

Dimension a mm : 0.65  
 Rated speed rpm : 1400  
 rack travel mm : 11.65  
 Tolerance mm : ± 0.05  
 Rated speed rpm : 650  
 rack travel mm : 13.10  
 Tolerance mm : ± 0.10  
 Rated speed rpm : 810  
 rack travel mm : 12.70  
 Tolerance mm : ± 0.10  
 Rated speed rpm : 1015  
 rack travel mm : 11.95  
 Tolerance mm : ± 0.15

BREAKAWAY

Rack travel in mm : 10.60  
 Rated speed rpm : 1453  
 Tolerance 1/min : ± 8

STARTING FUEL DELIVERY

Rated speed rpm : 100  
 rack travel mm : 17.30  
 Tolerance mm : ± 0.30  
 Del. quantity  
 cm<sup>3</sup>/1000 strokes : 105.0



Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  5.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  8.0

---

#### LOW IDLE

Rated speed rpm : 275  
rack travel mm : 5.45  
Tolerance mm :  $\pm$  0.10  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 12.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  3.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  4.5  
Speed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 2.5  
Check tolerance  
cm<sup>3</sup>/1000S. : 4.0

---

End of test specification sheet

# BOSCH INJ. PUMP TEST SPECIFICATIONS

## Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 13.09.95  
Test oil : ISO 4113

Combination No. : 0 402 736 885

Injection pump  
Pump designation : PES6P120A120RS7370  
EP type number : 0 412 726 934

Governor  
Governor design. : RQV400...1250PA1212K  
Governor no. : 0 421 815 462

Cust. part No. : 3929688

Customer-spec. information  
Customer : CDC  
Motor : 6BTA-A  
Power KW : 131.0

## TEST BENCH REQUIREMENTS

Inlet line : 3.2

Test oil inlet  
temp. °C : 40  
Tolerance °C : ± 2.0

Overflow valve : 2 417 413 086

Inlet press. bar : 2.0  
Tolerance bar : ± 0.1

Test nozzle holder  
assembly : 1 688 901 103

Opening pressure  
bar : 208.5  
Tolerance bar : ± 1.5

Test lines : 1 680 750 015

Outside diameter : 6.0

x inside diameter : 3.0  
x length mm : 600

## REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

## BEGINNING OF DELIVERY

Test pressure bar : 17.0  
Tolerance bar : ± 1.0

Firing order : 1- 5- 3- 6- 2-  
: 4

Phasing : 0-60-120-180-240  
: -300

Tolerance : ± 0.50  
Check  
tolerance °NW : ± 0.75

## Start of delivery blocking

\*NW after s.o.d. : 6.50  
Tolerance : ± 0.50  
Check  
tolerance °NW : ± 0.75

Barrel no. : 1

## BASIC SETTING

Rated speed rpm : 1250

Rack travel in mm : 13.85  
Tolerance mm : ± 0.05

Del. quantity  
cm<sup>3</sup>/1000 strokes : 170.0

Tolerance  
cm<sup>3</sup>/1000 strokes : ± 1.0

Check tolerance  
cm<sup>3</sup>/1000S. : ± 4.0

Speed

Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0

Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

Del. quantity  
cm<sup>3</sup>/1000 strokes : 19.5

Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  3.0

Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  5.0

Speed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 4.0

Check tolerance  
cm<sup>3</sup>/1000S. : 8.0

#### (B) SETTING OF INJECTION PUMP WITH GOVERNOR

##### GUIDE SLEEVE TRAVEL

Rated speed rpm : 420  
guide sleeve  
travel mm : 1.56  
Tolerance mm :  $\pm$  0.20

Rated speed rpm : 1412  
guide sleeve  
travel mm : 9.88  
Tolerance mm :  $\pm$  0.15

Rated speed rpm : 1020  
guide sleeve  
travel mm : 5.97  
Tolerance mm :  $\pm$  0.25

Rated speed rpm : 2000  
guide sleeve  
travel mm : 13.50  
Tolerance mm :  $\pm$  0.50

##### FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1250  
Aneroid pressure  
hPa : 1200  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 170.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  1.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  4.0  
Speed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0

Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

##### RATED SPEED

control lever  
position degree : 114.0  
tolerance degree :  $\pm$  6.0

rack travel mm : 12.80  
Rated speed rpm : 1330  
Tolerance 1/min :  $\pm$  15

rack travel mm : 4.00  
Rated speed rpm : 1580  
Tolerance 1/min :  $\pm$  5

rack travel mm : 0.50  
Tolerance mm :  $\pm$  0.50  
Rated speed rpm : 1700

##### LOW IDLE

control lever  
position degree : 62.5  
tolerance degree :  $\pm$  6.0

##### Testing:

Rated speed rpm : 420  
rack travel mm : 6.20  
Tolerance mm :  $\pm$  0.20

Rated speed rpm : 300

CRT mm min. :  $>$  7.20

Rated speed rpm : 425

##### TORQUE CONTROL

Rated speed rpm : 1250  
rack travel mm : 13.85  
Tolerance mm :  $\pm$  0.05

Rated speed rpm : 800  
rack travel mm : 11.80  
Tolerance mm :  $\pm$  0.10

Rated speed rpm : 1000  
rack travel mm : 12.50  
Tolerance mm :  $\pm$  0.20

---

ANEROID/ALTITUDE  
COMPENSATOR TEST

SETTING

Rated speed rpm : 1250  
Pressure hPa : 1200

MEASUREMENT

Pressure hPa : -  
Rated speed rpm : 1250  
rack travel mm : 9.40  
Tolerance mm :  $\pm$  0.20

Rated speed rpm : 1250

Pressure hPa : 440  
rack travel mm : 12.55  
Tolerance mm :  $\pm$  0.30

Pressure hPa : 265  
rack travel mm : 10.80  
Tolerance mm :  $\pm$  0.20

---

START CUT-OUT

Rated speed rpm : < 315  
Check  
speed 1/min : < 325

---

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure  
hPa : 1200  
Rated speed rpm : 800  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 123.5  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  3.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  6.0  
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

Aneroid pressure  
hPa : -  
Rated speed rpm : 1250  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 96.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  1.0

Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  4.0

---

BREAKAWAY

Rack travel in mm : 12.80  
Rated speed rpm : 1330  
Tolerance 1/min :  $\pm$  15

---

STARTING FUEL DELIVERY

Rated speed rpm : 100  
rack travel mm : 11.70  
Tolerance mm :  $\pm$  0.50  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 157.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  20.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  25.0

---

LOW IDLE

Del. quantity  
cm<sup>3</sup>/1000 strokes : 19.5  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  3.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  5.0  
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 4.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 8.0

---

End of test specification sheet

# BOSCH INJ. PUMP TEST SPECIFICATIONS

## Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 29.09.95  
Test oil : ISO 4113

Combination No. : 0 401 446 150

Injection pump  
Pump designation : PE6R130/720RS1506  
EP type number : 0 411 436 002

Governor  
Governor design. : RQV250...1050R4K  
Governor no. : 0 421 415 003

Cust. part No. : 865 020 P02 v. 08/94

Customer-spec. information  
Customer : PENTA  
Motor : TAMD163 P-A  
Power KW : 553.0

## TEST BENCH REQUIREMENTS

Inlet line : 3.2

Vibration damper  
(RoBo diaphragm) : 3.1

Test oil inlet temp. °C : 40  
Tolerance °C : ± 2.0

Overflow valve : 2 417 413 078

Inlet press. bar : 2.5  
Tolerance bar : ± 0.1

Test nozzle holder assembly : 1 688 901 105

Opening pressure bar : 208.5  
Tolerance bar : ± 1.5

Test lines : 1 680 750 089

Outside diameter : 8.0

x inside diameter : 3.0  
x length mm : 600

## REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

## BEGINNING OF DELIVERY

Test pressure bar : 26.0  
Tolerance bar : ± 1.0

Prestroke mm : 4.45  
Tolerance mm : ± 0.05

test only : ± 0.10

Rack travel in mm : 10.50  
Tolerance mm : ± 0.50

Firing order : 1- 5- 3- 6- 2-  
: 4

Phasing : 0-60-120-180-240  
: -300  
Tolerance : ± 0.30  
Check tolerance °NW : ± 0.75

Start of delivery mark

Barrel no. : 1

## BASIC SETTING

Rated speed rpm : 1050

Rack travel in mm : 14.40  
Tolerance mm : ± 0.05

Del. quantity cm<sup>3</sup>/1000 strokes : 450.0

Tolerance  
cm<sup>3</sup>/1000 strokes : + 2.0

Check tolerance  
cm<sup>3</sup>/1000S. : +- 5.0

Speed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 13.0

Check tolerance  
cm<sup>3</sup>/1000S. : 17.0

Rated speed rpm : 250

Rack travel in mm : 6.65  
Tolerance mm : +- 0.30

Del. quantity  
cm<sup>3</sup>/1000 strokes : 95.0

Tolerance  
cm<sup>3</sup>/1000 strokes : +- 4.0

Check tolerance  
cm<sup>3</sup>/1000S. : +- 7.0

Speed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 11.0

Check tolerance  
cm<sup>3</sup>/1000S. : 15.0

#### (B) SETTING OF INJECTION PUMP WITH GOVERNOR

##### GUIDE SLEEVE TRAVEL

Rated speed rpm : 250  
guide sleeve  
travel mm : 1.26  
Tolerance mm : +- 0.25

Rated speed rpm : 1106  
guide sleeve  
travel mm : 9.18  
Tolerance mm : +- 0.25

Rated speed rpm : 895  
guide sleeve  
travel mm : 6.42  
Tolerance mm : +- 0.25

Rated speed rpm : 310  
guide sleeve  
travel mm : 2.00  
Tolerance mm : +- 0.25

Rated speed rpm : 360  
guide sleeve  
travel mm : 2.41  
Tolerance mm : +- 0.25

Rated speed rpm : 570  
guide sleeve  
travel mm : 3.54  
Tolerance mm : +- 0.25

Rated speed rpm : 1360  
guide sleeve  
travel mm : 13.50  
Tolerance mm : +- 0.50

##### GUIDE SLEEVE POSITION

Rated speed rpm : 1205

Rack travel in mm : 11.00  
Tolerance mm : +- 2.50

##### FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1050  
Aneroid pressure  
hPa : 2200

Del. quantity  
cm<sup>3</sup>/1000 strokes : 450.0

Tolerance  
cm<sup>3</sup>/1000 strokes : +- 2.0

Check tolerance  
cm<sup>3</sup>/1000S. : +- 5.0

Speed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 13.0

Check tolerance  
cm<sup>3</sup>/1000S. : 17.0

##### RATED SPEED

control lever  
position degree : 65.0  
tolerance degree : +- 4.0

control lever  
position degree : 119.0  
tolerance degree : +- 4.0

rack travel mm : 13.40  
Rated speed rpm : 1105  
Tolerance 1/min : +- 5

rack travel mm : 4.00  
Rated speed rpm : 1200  
Tolerance 1/min : +- 15

rack travel mm : 0.50  
Tolerance mm : +- 0.50  
Rated speed rpm : 1300

---

## LOW IDLE

control lever  
position degree : 74.0  
tolerance degree :  $\pm$  4.0

control lever  
position degree : 20.0  
tolerance degree :  $\pm$  4.0

### Testing:

Rated speed rpm : 250  
rack travel mm : 6.65  
Tolerance mm :  $\pm$  0.10

Rated speed rpm : 150

CRT mm min. :  $>$  7.70

Rated speed rpm : 380

---

## TORQUE CONTROL

Rated speed rpm : 1050  
rack travel mm : 14.40  
Tolerance mm :  $\pm$  0.05

Rated speed rpm : 850  
rack travel mm : 13.20  
Tolerance mm :  $\pm$  0.15

Rated speed rpm : 975  
rack travel mm : 14.30  
Tolerance mm :  $\pm$  0.20

---

## ANEROID/ALTITUDE COMPENSATOR TEST

### SETTING

Rated speed rpm : 1050  
Pressure hPa : 2200  
rack travel mm : 14.40  
Tolerance mm :  $\pm$  0.05

### MEASUREMENT

Pressure hPa : -  
Rated speed rpm : 500  
rack travel mm : 8.70  
Tolerance mm :  $\pm$  0.15

Rated speed rpm : 1050

Pressure hPa : 1580  
rack travel mm : 5.10  
Tolerance mm :  $\pm$  0.10

Pressure hPa : 400  
rack travel mm : 0.25  
Tolerance mm :  $\pm$  0.05

---

## FUEL DELIVERY CHARACTERISTICS

Aneroid pressure  
hPa : 2200  
Rated speed rpm : 850  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 412.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  4.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  7.0  
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 15.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 19.0

Aneroid pressure  
hPa : -  
Rated speed rpm : 500  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 238.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  2.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  5.0

---

## BREAKAWAY

Rack travel in mm : 13.40  
Rated speed rpm : 1105  
Tolerance 1/min :  $\pm$  5

---

## STARTING FUEL DELIVERY

Rated speed rpm : 100  
rack travel mm : 13.10  
Tolerance mm :  $\pm$  0.30  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 385.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  20.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  25.0

---

LOW IDLE

Rated speed rpm : 250  
rack travel mm : 6.65  
Tolerance mm :  $\pm$  0.30  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 95.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  4.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  7.0  
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 11.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 15.0

---

End of test specification sheet



# BOSCH INJ. PUMP TEST SPECIFICATIONS

## Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 21.09.95  
Test oil : ISO 4113  
Combination No. : 0 401 848 829  
Injection pump  
Pump designation : PE8P110A320LS3865  
EP type number : 0 411 818 728  
Governor  
Governor design. : RQ250/1150PA1250  
Governor no. : 0 421 801 796

Cust. part No. :

Customer-spec. information  
Customer : DAEWOO  
Motor : V2-8NA

## TEST BENCH REQUIREMENTS

Inlet line : 3.1  
Test oil inlet  
temp. °C : 40  
Tolerance °C : ± 2.0  
Overflow valve : 1 417 413 025  
Inlet press. bar : 1.5  
Tolerance bar : ± 0.1  
Test nozzle holde  
assembly : 1 688 901 101  
Opening pressure  
bar : 208.5  
Tolerance bar : ± 1.5  
Test lines : 1 680 750 008  
Outside diameter : 6.0

F01

x inside diameter : 2.0  
x length mm : 600

## REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

## BEGINNING OF DELIVERY

Test pressure bar : 26.0  
Tolerance bar : ± 1.0  
Prestroke mm : 4.00  
Tolerance mm : ± 0.05  
test only : ± 0.10  
Rack travel in mm : 10.50  
Tolerance mm : ± 1.50  
Firing order : 8- 7- 2- 6- 3  
                  : - 5- 4- 1  
Phasing : 0-45-90-135-180  
          : -225-270-315  
Tolerance : ± 0.30  
Check  
tolerance °NW : ± 0.50  
Start of delivery mark  
Barrel no. : 8

## BASIC SETTING

Rated speed rpm : 1150  
Rack travel in mm : 11.80  
Tolerance mm : ± 0.05  
Del. quantity  
cm3/1000 strokes : 126.0  
Tolerance  
cm3/1000 strokes : ± 1.0  
Check tolerance  
cm3/1000s. : ± 4.0

---

Speed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 6.0

---

Check tolerance  
cm<sup>3</sup>/1000S. : 10.0

Rated speed rpm : 250

Rack travel in mm : 8.10  
Tolerance mm :  $\pm$  0.30

Del. quantity  
cm<sup>3</sup>/1000 strokes : 25.0

Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  3.0

Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  6.0

Speed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 6.0

Check tolerance  
cm<sup>3</sup>/1000S. : 10.0

(B) SETTING OF INJECTION PUMP  
WITH GOVERNOR

---

GUIDE SLEEVE TRAVEL

Rated speed rpm : 250  
guide sleeve  
travel mm : 1.59  
Tolerance mm :  $\pm$  0.20

Rated speed rpm : 1205  
guide sleeve  
travel mm : 7.34  
Tolerance mm :  $\pm$  0.15

Rated speed rpm : 1150  
guide sleeve  
travel mm : 7.00  
Tolerance mm :  $\pm$  0.10

Rated speed rpm : 414  
guide sleeve  
travel mm : 5.47  
Tolerance mm :  $\pm$  0.10

Rated speed rpm : 510  
guide sleeve  
travel mm : 7.00  
Tolerance mm :  $\pm$  0.10

Rated speed rpm : 1340  
guide sleeve  
travel mm : 11.50  
Tolerance mm :  $\pm$  0.50

---

GUIDE SLEEVE POSITION

Rated speed rpm : 700

Rack travel in mm : 15.50  
Tolerance mm :  $\pm$  1.30

---

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1150  
Aneroid pressure  
hPa : -

Del. quantity  
cm<sup>3</sup>/1000 strokes : 126.0

Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  1.0

Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  4.0

Speed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 6.0

Check tolerance  
cm<sup>3</sup>/1000S. : 10.0

---

RATED SPEED

control lever  
position degree : 36.0  
tolerance degree :  $\pm$  4.0

control lever  
position degree : 98.0  
tolerance degree :  $\pm$  4.0

rack travel mm : 10.80  
Rated speed rpm : 1203  
Tolerance 1/min :  $\pm$  5

rack travel mm : 4.00  
Rated speed rpm : 1260  
Tolerance 1/min :  $\pm$  15

rack travel mm : 0.50  
Tolerance mm :  $\pm$  0.50  
Rated speed rpm : 1350

---

LOW IDLE

control lever  
position degree : 77.0  
tolerance degree :  $\pm$  4.0

control lever  
position degree : 14.0  
tolerance degree :  $\pm$  4.0

Testing:

Rated speed rpm : 250  
rack travel mm : 8.10  
Tolerance mm :  $\pm$  0.10

rack travel mm : 2.00  
Rated speed rpm : 400  
Tolerance 1/min :  $\pm$  20

Rated speed rpm : 150

CRT mm min. :  $>$  9.90

---

TORQUE CONTROL

Rated speed rpm : 1150  
rack travel mm : 11.80  
Tolerance mm :  $\pm$  0.05

Rated speed rpm : 650  
rack travel mm : 11.80  
Tolerance mm :  $\pm$  0.10

---

START CUT-OUT

Rated speed rpm :  $<$  170  
Check  
speed 1/min :  $<$  190

---

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure  
hPa : -  
Rated speed rpm : 650  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 127.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  3.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  6.0

---

BREAKAWAY

Rack travel in mm : 10.80  
Rated speed rpm : 1203  
Tolerance 1/min :  $\pm$  5

---

STARTING FUEL DELIVERY

Rated speed rpm : 100  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 135.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  20.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  24.0

---

LOW IDLE

Rated speed rpm : 250  
rack travel mm : 8.10  
Tolerance mm :  $\pm$  0.30  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 25.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  3.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  6.0  
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 6.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 10.0

---

End of test specification sheet

# BOSCH INJ. PUMP TEST SPECIFICATIONS

## Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 28.09.95  
Test oil : ISO 4113

Combination No. : 0 401 876 789

Injection pump  
Pump designation : PE6P120A320RS3189  
EP type number : 0 411 826 759

Governor  
Governor design. : RSV650...750P4A421  
: -13  
Governor no. : 0 421 833 466

Cust. part No. : 864818 P04 v. 12/95

Customer-spec. information  
Customer : PENTA  
Motor : TD710G

## TEST BENCH REQUIREMENTS

Inlet line : 3.1

Vibration  
damper  
(RoBo diaphragm) : 4.2

Test oil inlet  
temp. °C : 40  
Tolerance °C : ± 2.0

Overflow valve : 1 457 413 010

Inlet press. bar : 1.5  
Tolerance bar : ± 0.1

Overflow quantity  
min. l/h : 195  
Tolerance l/h : ± 10.0

Test nozzle holder  
assembly : 1 688 901 019

Opening pressure  
bar : 208.5  
Tolerance bar : ± 1.5

Test lines : 1 680 750 075

Outside diameter : 8.0

x inside diameter : 3.0  
x length mm : 1000

## REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

## BEGINNING OF DELIVERY

Test pressure bar : 26.0  
Tolerance bar : ± 1.0

Prestroke mm : 2.65  
Tolerance mm : ± 0.05

test only : ± 0.10

Rack travel in mm : 10.50  
Tolerance mm : ± 1.50

Firing order : 1- 5- 3- 6- 2-  
: 4

Phasing : 0-60-120-180-240  
: -300

Tolerance : ± 0.30  
Check  
tolerance °NW : ± 0.75

Start of delivery mark

Barrel no. : 1

## BASIC SETTING

Rated speed rpm : 700

Rack travel in mm : 9.00  
Tolerance mm : ± 0.05

Del. quantity  
cm<sup>3</sup>/1000 strokes : 180.0

Tolerance  
cm<sup>3</sup>/1000 strokes : ± 1.0

Check tolerance  
cm<sup>3</sup>/1000S. : ± 4.0

Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 5.0

Check tolerance  
cm<sup>3</sup>/1000S. : 9.0

Rated speed rpm : 650

Rack travel in mm : 3.20  
Tolerance mm : ± 0.20

Del. quantity  
cm<sup>3</sup>/1000 strokes : 22.0

Tolerance  
cm<sup>3</sup>/1000 strokes : ± 3.0

Check tolerance  
cm<sup>3</sup>/1000S. : ± 5.0

Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 5.0

Check tolerance  
cm<sup>3</sup>/1000S. : 7.0

#### (B) SETTING OF INJECTION PUMP WITH GOVERNOR

##### GUIDE SLEEVE POSITION

Rated speed rpm : 800

Rack travel in mm : 0.50  
Tolerance mm : ± 0.20

governor spring  
pre-tension  
click setting x : 4.50

##### FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 700  
Aneroid pressure  
hPa : -  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 180.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 1.0

Check tolerance  
cm<sup>3</sup>/1000S. : ± 4.0  
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 5.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 9.0

##### RATED SPEED

control lever  
position degree : 92.0  
tolerance degree : ± 4.0

rack travel mm : 8.00  
Rated speed rpm : 753  
Tolerance 1/min : ± 3

rack travel mm : 4.00  
Rated speed rpm : 779  
Tolerance 1/min : ± 7

rack travel mm : 0.85  
Tolerance mm : ± 0.55  
Rated speed rpm : 900

##### LOW IDLE

control lever  
position degree : 86.0  
tolerance degree : ± 4.0

##### Testing:

Rated speed rpm : 650  
rack travel mm : 3.20  
Tolerance mm : ± 0.10

rack travel mm : 2.00  
Rated speed rpm : 660  
Tolerance 1/min : ± 30

##### SET IDLE AUXILIARY SPRING

rack travel mm : 2.00

##### TORQUE CONTROL

Rated speed rpm : 700  
rack travel mm : 9.00  
Tolerance mm : ± 0.05

---

BREAKAWAY

Rack travel in mm : 8.00  
Rated speed rpm : 753  
Tolerance 1/min :  $\pm$  3

---

STARTING FUEL DELIVERY

Rated speed rpm : 100  
rack travel mm : 20.50  
Tolerance mm :  $\pm$  0.50

---

LOW IDLE

Rated speed rpm : 650  
rack travel mm : 3.20  
Tolerance mm :  $\pm$  0.20  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 22.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  3.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  5.0  
Speed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 5.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 7.0

---

End of test specification sheet

# BOSCH INJ. PUMP TEST SPECIFICATIONS

## Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 19.06.95  
Test oil : ISO 4113

Combination No. : 0 401 876 792

Injection pump  
Pump designation : PE6P120A320RS3313  
EP type number : 0 411 826 807

Governor  
Governor design. : RSV350...1100P8A558  
Governor no. : 0 421 833 397

Cust. part No. : 1342533

Customer-spec. information  
Customer : SCANIA  
Motor : D9

## TEST BENCH REQUIREMENTS

Inlet line : 3.1

Vibration  
damper  
(Ro80 diaphragm) : 4.2

Test oil inlet  
temp. °C : 40  
Tolerance °C : ± 2.0

Overflow valve : 1 417 413 025

Inlet press. bar : 2.5  
Tolerance bar : ± 0.1

Test nozzle holde  
assembly : 1 688 901 104

Opening pressure  
bar : 251.5  
Tolerance bar : ± 1.5

Test lines : 1 680 750 008

Outside diameter : 6.0

x inside diameter : 2.0  
x length mm : 600

## REMARKS

Start-of-delivery setting with RO80 diaphragm.

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

## BEGINNING OF DELIVERY

Test pressure bar : 26.0  
Tolerance bar : ± 1.0

Prestroke mm : 4.45  
Tolerance mm : ± 0.05

test only : ± 0.10

Rack travel in mm : 10.50  
Tolerance mm : ± 1.50

Firing order : 1- 5- 3- 6- 2-  
: 4

Phasing : 0-60-120-180-240  
: -300

Tolerance : ± 0.30

Check  
tolerance °NW : ± 0.50

Start of delivery mark

Barrel no. : 1

## BASIC SETTING

Rated speed rpm : 700

Rack travel in mm : 11.65  
Tolerance mm : ± 0.05

Del. quantity  
cm<sup>3</sup>/1000 strokes : 144.0

Tolerance  
cm<sup>3</sup>/1000 strokes : ± 1.0

Check tolerance  
cm<sup>3</sup>/1000S. : ± 4.0

Spread  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0

Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

Rated speed rpm : 350

Rack travel in mm : 5.10  
Tolerance mm : ± 0.30

Del. quantity  
cm<sup>3</sup>/1000 strokes : 18.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 3.0

Check tolerance  
cm<sup>3</sup>/1000S. : ± 6.0

Spread  
Tolerance  
cm<sup>3</sup>/1000 strokes : 4.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 8.0

#### (B) SETTING OF INJECTION PUMP WITH GOVERNOR

##### GUIDE SLEEVE POSITION

Rated speed rpm : 800

Rack travel in mm : 0.50  
Tolerance mm : ± 0.20

governor spring  
pre-tension  
click setting x : 6.00

##### FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 700  
Aneroid pressure  
hPa : 1500  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 144.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 1.0

Check tolerance  
cm<sup>3</sup>/1000S. : ± 4.0

Spread  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

##### RATED SPEED

control lever  
position degree : 60.0  
tolerance degree : ± 4.0

control lever  
position degree : 110.0  
tolerance degree : ± 4.0

rack travel mm : 10.60  
Rated speed rpm : 1145  
Tolerance 1/min : ± 5

rack travel mm : 4.00  
Rated speed rpm : 1210  
Tolerance 1/min : ± 15

rack travel mm : 0.85  
Tolerance mm : ± 0.55  
Rated speed rpm : 1350

rack travel mm : 4.00  
Rated speed rpm : 1225

##### LOW IDLE

control lever  
position degree : 78.0  
tolerance degree : ± 4.0

control lever  
position degree : 28.0  
tolerance degree : ± 4.0

##### Setting point w/out bumper spring

Rated speed rpm : 350  
rack travel mm : 4.60

##### Testing:

Rated speed rpm : 350  
rack travel mm : 5.10  
Tolerance mm : ± 0.10

rack travel mm : 2.00  
Rated speed rpm : 550



Tolerance 1/min : + 30

---

#### TORQUE CONTROL

Rated speed rpm : 700  
rack travel mm : 11.65  
Tolerance mm : + 0.05

Rated speed rpm : 1100  
rack travel mm : 11.65  
Tolerance mm : + 0.05

---

#### ANEROID/ALTITUDE COMPENSATOR TEST

##### SETTING

Rated speed rpm : 500  
Pressure hPa : 1500  
rack travel mm : 11.65  
Tolerance mm : + 0.05

##### MEASUREMENT

Pressure hPa : -  
Rated speed rpm : 500  
rack travel mm : 10.30  
Tolerance mm : + 0.20

Rated speed rpm : 500

Pressure hPa : 210  
rack travel mm : 10.70  
Tolerance mm : + 0.15

Pressure hPa : 280  
rack travel mm : 11.15  
Tolerance mm : + 0.05

---

#### FUEL DELIVERY CHARACTERISTICS

Aneroid pressure  
hPa : 1500  
Rated speed rpm : 1100  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 145.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : + 4.0  
Check tolerance  
cm<sup>3</sup>/1000S. : + 6.0

Aneroid pressure  
hPa : -  
Rated speed rpm : 500

Del. quantity  
cm<sup>3</sup>/1000 strokes : 106.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : + 1.0  
Check tolerance  
cm<sup>3</sup>/1000S. : + 4.0

---

#### BREAKAWAY

Rack travel in mm : 10.60  
Rated speed rpm : 1145  
Tolerance 1/min : + 5

---

#### STARTING FUEL DELIVERY

Rated speed rpm : 100  
rack travel mm : 10.30  
Tolerance mm : + 0.20  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 100.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : + 20.0  
Check tolerance  
cm<sup>3</sup>/1000S. : + 24.0

---

#### LOW IDLE

Rated speed rpm : 350  
rack travel mm : 5.10  
Tolerance mm : + 0.30  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 18.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : + 3.0  
Check tolerance  
cm<sup>3</sup>/1000S. : + 6.0  
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 4.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 8.0

---

End of test specification sheet

# BOSCH INJ. PUMP TEST SPECIFICATIONS

## Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 28.09.95  
Test oil : ISO 4113  
  
Combination No. : 0 401 876 800  
  
Injection pump  
Pump designation : PE6P120A320RS3313  
EP type number : 0 411 826 807  
  
Governor  
Governor design. : RSV350...1050P8A558  
: -1  
Governor no. : 0 421 833 423

Cust. part No. : 1351267

Customer-spec. information  
Customer : SCANIA  
Motor : D9

## TEST BENCH REQUIREMENTS

Inlet line : 3.1

Vibration  
damper  
(RoBo diaphragm) : 4.2

Test oil inlet  
temp. °C : 40  
Tolerance °C : ± 2.0

Overflow valve : 1 417 413 025

Inlet press. bar : 2.5  
Tolerance bar : ± 0.1

Test nozzle holde  
assembly : 1 688 901 104

Opening pressure  
bar : 251.5  
Tolerance bar : ± 1.5

Test lines : 1 680 750 008

Outside diameter : 6.0

x inside diameter : 2.0  
x length mm : 600

## REMARKS

Start-of-delivery setting with ROBO diaphragm.

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

## BEGINNING OF DELIVERY

Test pressure bar : 26.0  
Tolerance bar : ± 1.0

Prestroke mm : 4.45  
Tolerance mm : ± 0.05

test only : ± 0.10

Rack travel in mm : 10.50  
Tolerance mm : ± 1.50

Firing order : 1- 5- 3- 6- 2-  
: 4

Phasing : 0-60-120-180-240  
: -300

Tolerance : ± 0.30  
Check  
tolerance °NW : ± 0.50

Start of delivery mark

Barrel no. : 1

## BASIC SETTING

Rated speed rpm : 700

Rack travel in mm : 12.35  
Tolerance mm : ± 0.05

Del. quantity  
cm<sup>3</sup>/1000 strokes : 160.0

---

Tolerance  
cm<sup>3</sup>/1000 strokes : +- 1.0

---

Check tolerance  
cm<sup>3</sup>/1000S. : +- 4.0

---

Spread  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0

---

Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

---

Rated speed rpm : 350

Rack travel in mm : 5.10  
Tolerance mm : +- 0.30

Del. quantity  
cm<sup>3</sup>/1000 strokes : 18.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : +- 3.0  
Check tolerance  
cm<sup>3</sup>/1000S. : +- 6.0

Spread  
Tolerance  
cm<sup>3</sup>/1000 strokes : 4.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 8.0

#### (B) SETTING OF INJECTION PUMP WITH GOVERNOR

##### GUIDE SLEEVE POSITION

Rated speed rpm : 800

Rack travel in mm : 0.50  
Tolerance mm : +- 0.20

governor spring  
pre-tension  
click setting x : 6.00

##### FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 700  
Aneroid pressure  
hPa : -

Del. quantity  
cm<sup>3</sup>/1000 strokes : 160.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : +- 1.0

Check tolerance  
cm<sup>3</sup>/1000S. : +- 4.0

Spread  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

##### RATED SPEED

control lever  
position degree : 56.0  
tolerance degree : +- 4.0

control lever  
position degree : 106.0  
tolerance degree : +- 4.0

rack travel mm : 10.10  
Rated speed rpm : 1095  
Tolerance 1/min : +- 5

rack travel mm : 4.00  
Rated speed rpm : 1170  
Tolerance 1/min : +- 15

rack travel mm : 0.85  
Tolerance mm : +- 0.55  
Rated speed rpm : 1300

##### LOW IDLE

control lever  
position degree : 77.0  
tolerance degree : +- 4.0

control lever  
position degree : 28.0  
tolerance degree : +- 4.0

##### Setting point w/out bumper spring

Rated speed rpm : 350  
rack travel mm : 4.60

##### Testing:

Rated speed rpm : 350  
rack travel mm : 5.10  
Tolerance mm : +- 0.10

rack travel mm : 2.00  
Rated speed rpm : 550  
Tolerance 1/min : +- 30

---

#### TORQUE CONTROL

Rated speed rpm : 700  
rack travel mm : 12.35  
Tolerance mm :  $\pm 0.05$

Rated speed rpm : 1050  
rack travel mm : 11.15  
Tolerance mm :  $\pm 0.05$

Rated speed rpm : 925  
rack travel mm : 11.95  
Tolerance mm :  $\pm 0.10$

Rated speed rpm : 950  
rack travel mm : 11.50  
Tolerance mm :  $\pm 0.15$

---

#### ANEROID/ALTITUDE COMPENSATOR TEST

##### SETTING

Rated speed rpm : 500  
Pressure hPa : 1500  
rack travel mm : 12.35  
Tolerance mm :  $\pm 0.05$

##### MEASUREMENT

Pressure hPa : -  
Rated speed rpm : 500  
rack travel mm : 10.50  
Tolerance mm :  $\pm 0.20$

Rated speed rpm : 500

Pressure hPa : 230  
rack travel mm : 10.95  
Tolerance mm :  $\pm 0.15$

Pressure hPa : 310  
rack travel mm : 11.35  
Tolerance mm :  $\pm 0.05$

---

#### FUEL DELIVERY CHARACTERISTICS

Aneroid pressure  
hPa : -  
Rated speed rpm : 1050  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 136.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm 4.0$

Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm 6.0$

Aneroid pressure  
hPa : -  
Rated speed rpm : 500  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 114.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm 1.0$   
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm 4.0$

---

#### BREAKAWAY

Rack travel in mm : 10.10  
Rated speed rpm : 1095  
Tolerance 1/min :  $\pm 5$

---

#### STARTING FUEL DELIVERY

Rated speed rpm : 100  
rack travel mm : 10.50  
Tolerance mm :  $\pm 0.20$   
Del. quantity  
cm<sup>3</sup>/1000 strokes : 100.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm 20.0$   
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm 24.0$

---

#### LOW IDLE

Rated speed rpm : 350  
rack travel mm : 5.10  
Tolerance mm :  $\pm 0.30$   
Del. quantity  
cm<sup>3</sup>/1000 strokes : 18.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm 3.0$   
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm 6.0$   
Speed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 4.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 8.0

---

End of test specification sheet

# BOSCH INJ. PUMP TEST SPECIFICATIONS

## Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 19.06.95  
Test oil : ISO 4113

Combination No. : 0 401 876 806

Injection pump  
Pump designation : PE6P120A320RS3313  
EP type number : 0 411 826 807

Governor  
Governor design. : RSV350...1100P8A558  
: -2  
Governor no. : 0 421 833 474

Cust. part No. : 1376947

Customer-spec. information  
Customer : SCANIA  
Motor : D 9

## TEST BENCH REQUIREMENTS

Inlet line : 3.1

Vibration  
damper  
(RoBo diaphragm) : 4.2

Test oil inlet  
temp. °C : 40  
Tolerance °C : ± 2.0

Overflow valve : 1 417 413 025

Inlet press. bar : 2.5  
Tolerance bar : ± 0.1

Test nozzle holde  
assembly : 1 688 901 104

Opening pressure  
bar : 251.5  
Tolerance bar : ± 1.5

Test lines : 1 680 750 008

Outside diameter : 6.0

x inside diameter : 2.0  
x length mm : 600

## REMARKS

Start-of-delivery setting with ROBO diaphragm.

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

## BEGINNING OF DELIVERY

Test pressure bar : 26.0  
Tolerance bar : ± 1.0

Prestroke mm : 4.45  
Tolerance mm : ± 0.05

test only : ± 0.10

Rack travel in mm : 10.50  
Tolerance mm : ± 1.50

Firing order : 1- 5- 3- 6- 2-  
: 4

Phasing : 0-60-120-180-240  
: -300

Tolerance : ± 0.30  
Check  
tolerance °NW : ± 0.50

Start of delivery mark

Barrel no. : 1

## BASIC SETTING

Rated speed rpm : 700

Rack travel in mm : 11.65  
Tolerance mm : ± 0.05

Del. quantity  
cm<sup>3</sup>/1000 strokes : 144.0

Tolerance  
cm<sup>3</sup>/1000 strokes : ± 1.0

Check tolerance  
cm<sup>3</sup>/1000S. : ± 4.0

Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0

Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

Rated speed rpm : 350

Rack travel in mm : 5.10  
Tolerance mm : ± 0.30

Del. quantity  
cm<sup>3</sup>/1000 strokes : 18.0

Tolerance  
cm<sup>3</sup>/1000 strokes : ± 3.0

Check tolerance  
cm<sup>3</sup>/1000S. : ± 6.0

Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 4.0

Check tolerance  
cm<sup>3</sup>/1000S. : 8.0

#### (B) SETTING OF INJECTION PUMP WITH GOVERNOR

##### GUIDE SLEEVE POSITION

Rated speed rpm : 800

Rack travel in mm : 0.50  
Tolerance mm : ± 0.20

governor spring  
pre-tension  
click setting x : 6.00

##### FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 700  
Aneroid pressure  
hPa : -  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 144.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 1.0

Check tolerance  
cm<sup>3</sup>/1000S. : ± 4.0

Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0

Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

##### RATED SPEED

control lever  
position degree : 63.0  
tolerance degree : ± 4.0

control lever  
position degree : 113.0  
tolerance degree : ± 4.0

rack travel mm : 10.60  
Rated speed rpm : 1145  
Tolerance 1/min : ± 5

rack travel mm : 4.00  
Rated speed rpm : 1210  
Tolerance 1/min : ± 15

rack travel mm : 0.85  
Tolerance mm : ± 0.55  
Rated speed rpm : 1350

rack travel mm : 4.00  
Rated speed rpm : 1225

##### LOW IDLE

control lever  
position degree : 77.0  
tolerance degree : ± 4.0

control lever  
position degree : 28.0  
tolerance degree : ± 4.0

##### Setting point w/out bumper spring

Rated speed rpm : 350  
rack travel mm : 4.60

##### Testing:

Rated speed rpm : 350  
rack travel mm : 5.10  
Tolerance mm : ± 0.10

rack travel mm : 2.00  
Rated speed rpm : 550

Tolerance 1/min : + 30

---

#### TORQUE CONTROL

Rated speed rpm : 700  
rack travel mm : 11.65  
Tolerance mm : + 0.05

Rated speed rpm : 1100  
rack travel mm : 11.65  
Tolerance mm : + 0.05

---

#### ANEROID/ALTITUDE COMPENSATOR TEST

##### SETTING

Rated speed rpm : 500  
Pressure hPa : 1500  
rack travel mm : 11.65  
Tolerance mm : + 0.05

##### MEASUREMENT

Pressure hPa : -  
Rated speed rpm : 500  
rack travel mm : 10.50  
Tolerance mm : + 0.20

Rated speed rpm : 500

Pressure hPa : 230  
rack travel mm : 10.95  
Tolerance mm : + 0.15

Pressure hPa : 310  
rack travel mm : 11.35  
Tolerance mm : + 0.05

---

#### FUEL DELIVERY CHARACTERISTICS

Aneroid pressure  
hPa : -  
Rated speed rpm : 1100  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 145.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : + 4.0  
Check tolerance  
cm<sup>3</sup>/1000S. : + 6.0

Aneroid pressure  
hPa : -  
Rated speed rpm : 500

Del. quantity  
cm<sup>3</sup>/1000 strokes : 114.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : + 1.0  
Check tolerance  
cm<sup>3</sup>/1000S. : + 4.0

---

#### BREAKAWAY

Rack travel in mm : 10.60  
Rated speed rpm : 1145  
Tolerance 1/min : + 5

---

#### STARTING FUEL DELIVERY

Rated speed rpm : 100  
rack travel mm : 10.50  
Tolerance mm : + 0.20

---

#### LOW IDLE

Rated speed rpm : 350  
rack travel mm : 5.10  
Tolerance mm : + 0.30  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 18.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : + 3.0  
Check tolerance  
cm<sup>3</sup>/1000S. : + 6.0  
Speed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 4.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 8.0

---

End of test specification sheet

# BOSCH INJ. PUMP TEST SPECIFICATIONS

## Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 19.06.95  
Test oil : ISO 4113

Combination No. : 0 401 876 807

Injection pump  
Pump designation : PE6P120A320RS3313  
EP type number : 0 411 826 807

Governor  
Governor design. : RSV35D...1100P8A558  
: -3  
Governor no. : 0 421 833 475

Cust. part No. : 1374851

Customer-spec. information  
Customer : SCANIA  
Motor : DSI9 43M

## TEST BENCH REQUIREMENTS

Inlet line : 3.1

Vibration  
damper  
(RoBo diaphragm) : 4.2

Test oil inlet  
temp. °C : 40  
Tolerance °C : ± 2.0

Overflow valve : 1 417 413 025

Inlet press. bar : 2.5  
Tolerance bar : ± 0.1

Overflow quantity  
min. l/h : 190  
Tolerance l/h : ± 10.0

Test nozzle holde  
assembly : 1 688 901 104

Opening pressure  
bar : 251.5  
Tolerance bar : ± 1.5

Test lines : 1 680 750 008

Outside diameter : 6.0

x inside diameter : 2.0  
x length mm : 600

## REMARKS

Start-of-delivery setting with ROBO diaphragm.

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

## BEGINNING OF DELIVERY

Test pressure bar : 26.0  
Tolerance bar : ± 1.0

Prestroke mm : 4.45  
Tolerance mm : ± 0.05

test only : ± 0.10

Rack travel in mm : 10.50  
Tolerance mm : ± 1.50

Firing order : 1- 5- 3- 6- 2-  
: 4

Phasing : 0-60-120-180-240  
: -300  
Tolerance : ± 0.30  
Check  
tolerance \*NW : ± 0.50

Start of delivery mark

Barrel no. : 1

## BASIC SETTING

Rated speed rpm : 700



Rack travel in mm : 13.85  
Tolerance mm :  $\pm$  0.05

Del. quantity  
cm<sup>3</sup>/1000 strokes : 205.0

Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  1.0

Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  4.0

Spread  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0

Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

Rated speed rpm : 350

Rack travel in mm : 5.10  
Tolerance mm :  $\pm$  0.30

Del. quantity  
cm<sup>3</sup>/1000 strokes : 18.0

Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  3.0

Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  6.0

Spread  
Tolerance  
cm<sup>3</sup>/1000 strokes : 4.0

Check tolerance  
cm<sup>3</sup>/1000S. : 8.0

#### (B) SETTING OF INJECTION PUMP WITH GOVERNOR

##### GUIDE SLEEVE POSITION

Rated speed rpm : 800

Rack travel in mm : 0.50  
Tolerance mm :  $\pm$  0.20

governor spring  
pre-tension  
click setting x : 6.00

##### FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 700  
Aneroid pressure  
hPa : -

Del. quantity  
cm<sup>3</sup>/1000 strokes : 205.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  1.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  4.0  
Spread  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

##### RATED SPEED

control lever  
position degree : 63.0  
tolerance degree :  $\pm$  4.0

control lever  
position degree : 113.0  
tolerance degree :  $\pm$  4.0

rack travel mm : 12.80  
Rated speed rpm : 1145  
Tolerance 1/min :  $\pm$  5

rack travel mm : 4.00  
Rated speed rpm : 1230  
Tolerance 1/min :  $\pm$  15

rack travel mm : 0.85  
Tolerance mm :  $\pm$  0.55  
Rated speed rpm : 1350

rack travel mm : 4.00  
Rated speed rpm : 1240

##### LOW IDLE

control lever  
position degree : 77.0  
tolerance degree :  $\pm$  4.0

control lever  
position degree : 28.0  
tolerance degree :  $\pm$  4.0

Setting point w/out bumper spring

Rated speed rpm : 350  
rack travel mm : 4.60

Testing:

Rated speed rpm : 350  
rack travel mm : 5.10

Tolerance mm :  $\pm$  0.10  
rack travel mm : 2.00  
Rated speed rpm : 525  
Tolerance 1/min :  $\pm$  30

---

#### TORQUE CONTROL

Rated speed rpm : 700  
rack travel mm : 13.85  
Tolerance mm :  $\pm$  0.05

Rated speed rpm : 1100  
rack travel mm : 13.85  
Tolerance mm :  $\pm$  0.05

---

#### ANEROID/ALTITUDE COMPENSATOR TEST

##### SETTING

Rated speed rpm : 500  
Pressure hPa : 1500  
rack travel mm : 13.85  
Tolerance mm :  $\pm$  0.05

##### MEASUREMENT

Pressure hPa : -  
Rated speed rpm : 500  
rack travel mm : 10.50  
Tolerance mm :  $\pm$  0.20

Rated speed rpm : 500

Pressure hPa : 320  
rack travel mm : 11.15  
Tolerance mm :  $\pm$  0.20

Pressure hPa : 610  
rack travel mm : 12.85  
Tolerance mm :  $\pm$  0.05

---

#### FUEL DELIVERY CHARACTERISTICS

Aneroid pressure  
hPa : -  
Rated speed rpm : 1100  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 190.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  4.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  6.0

Aneroid pressure  
hPa : -  
Rated speed rpm : 500  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 114.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  1.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  4.0

---

#### BREAKAWAY

Rack travel in mm : 12.80  
Rated speed rpm : 1145  
Tolerance 1/min :  $\pm$  5

---

#### STARTING FUEL DELIVERY

Rated speed rpm : 100  
rack travel mm : 10.50  
Tolerance mm :  $\pm$  0.20

---

#### LOW IDLE

Rated speed rpm : 350  
rack travel mm : 5.10  
Tolerance mm :  $\pm$  0.30  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 18.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  3.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  6.0  
Speed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 4.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 8.0

---

End of test specification sheet

# BOSCH INJ. PUMP TEST SPECIFICATIONS

## Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 27.09.95  
Test oil : ISO 4113  
  
Combination No. : 0 401 878 718  
  
Injection pump  
Pump designation : PE8P110A320LS3862  
EP type number : 0 411 818 727  
  
Governor  
Governor design. : RSV350...1050POA617  
Governor no. : 0 421 833 508

Cust. part No. : 0260749502

Customer-spec. information  
Customer : MB-NFZ  
Motor : OM442  
Power KW : 195.0

## TEST BENCH REQUIREMENTS

Inlet line : 3.1

Test oil inlet  
temp. °C : 40  
Tolerance °C : ± 2.0

Overflow valve : 1 417 413 047

Inlet press. bar : 1.5  
Tolerance bar : ± 0.1

Tolerance l/h : ± 10.0

Test nozzle holde  
assembly : 1 688 901 101

Opening pressure  
bar : 208.5  
Tolerance bar : ± 1.5

Test lines : 1 680 750 008

Outside diameter : 6.0  
x inside diameter : 2.0  
x length mm : 600

## REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

## BEGINNING OF DELIVERY

Test pressure bar : 26.0  
Tolerance bar : ± 1.0

Prestroke mm : 4.45  
Tolerance mm : ± 0.05

test only : ± 0.10

Rack travel in mm : 10.50  
Tolerance mm : ± 1.50

Firing order : 8- 7- 2- 6- 3  
: - 5- 4- 1

Phasing : 0-45-90-135-180  
: -225-270-315  
Tolerance : ± 0.30  
Check  
tolerance °NW : ± 0.50

Start of delivery mark

Barrel no. : 8

## BASIC SETTING

Rated speed rpm : 1050

Rack travel in mm : 11.90  
Tolerance mm : ± 0.05

Del. quantity  
cm<sup>3</sup>/1000 strokes : 115.0

Tolerance  
cm<sup>3</sup>/1000 strokes : ± 1.0

Check tolerance  
cm<sup>3</sup>/1000S. : + 3.5

---

Spread  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.5

---

Check tolerance  
cm<sup>3</sup>/1000S. : 13.0

Rated speed rpm : 350

Rack travel in mm : 7.60  
Tolerance mm : + 0.30

Del. quantity  
cm<sup>3</sup>/1000 strokes : 19.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : + 3.0

Check tolerance  
cm<sup>3</sup>/1000S. : + 5.5

Spread  
Tolerance  
cm<sup>3</sup>/1000 strokes : 6.5  
Check tolerance  
cm<sup>3</sup>/1000S. : 11.0

#### (B) SETTING OF INJECTION PUMP WITH GOVERNOR

---

##### GUIDE SLEEVE POSITION

Rated speed rpm : 800

Rack travel in mm : 0.50  
Tolerance mm : + 0.20

---

##### FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1050  
Aneroid pressure  
hPa : -  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 115.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : + 1.0  
Check tolerance  
cm<sup>3</sup>/1000S. : + 3.5

Spread  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.5  
Check tolerance  
cm<sup>3</sup>/1000S. : 13.0

---

##### RATED SPEED

control lever  
position degree : 96.0  
tolerance degree : + 4.0

rack travel mm : 10.90  
Rated speed rpm : 1095  
Tolerance 1/min : + 5

rack travel mm : 4.00  
Rated speed rpm : 1165  
Tolerance 1/min : + 15

rack travel mm : 0.85  
Tolerance mm : + 0.55  
Rated speed rpm : 1350

---

##### LOW IDLE

control lever  
position degree : 74.0  
tolerance degree : + 4.0

##### Testing:

Rated speed rpm : 350  
rack travel mm : 5.80  
Tolerance mm : + 0.10

rack travel mm : 2.00  
Rated speed rpm : 405  
Tolerance 1/min : + 30

Rated speed rpm : 100

CRT mm min. : > 19.50

##### SET IDLE AUXILIARY SPRING

rack travel mm : 2.00

---

##### TORQUE CONTROL

Rated speed rpm : 1050  
rack travel mm : 11.90  
Tolerance mm : + 0.05

Rated speed rpm : 600  
rack travel mm : 11.90  
Tolerance mm : + 0.10

---

##### FUEL DELIVERY CHARACTERISTICS

Aneroid pressure  
hPa : -  
Rated speed rpm : 600  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 122.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 3.0  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 5.5  
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 11.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 14.0

---

#### BREAKAWAY

Rack travel in mm : 10.90  
Rated speed rpm : 1095  
Tolerance 1/min : ± 5

---

#### STARTING FUEL DELIVERY

Rated speed rpm : 100  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 140.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 10.0  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 14.0

---

#### LOW IDLE

Rated speed rpm : 350  
rack travel mm : 7.60  
Tolerance mm : ± 0.30  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 19.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 3.0  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 5.5  
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 6.5  
Check tolerance  
cm<sup>3</sup>/1000S. : 11.0

---

End of test specification sheet

## BOSCH INJ. PUMP TEST SPECIFICATIONS

## Note remarks

Refer to Service Info for test and  
adjustment instructions.  
See microcard(s) W400/...

Edition : 28.09.95  
Test oil : ISO 4113

Combination No. : 0 402 046 869

Injection pump  
Pump designation : PES6P110A320RS3349  
EP type number : 0 412 016 753

Governor  
Governor design. : RQV350...1400PA1220K  
Governor no. : 0 421 815 471

Cust. part No. : 16700-D8801

Customer-spec. information  
Customer : NISSAN-MISA  
Motor : M 3.6 TI N  
Power KW : 150.0

## TEST BENCH REQUIREMENTS

Inlet line : 3.1

Test oil inlet  
temp. °C : 40  
Tolerance °C : ± 2.0

Overflow valve : 1 417 413 047

Inlet press. bar : 1.5  
Tolerance bar : ± 0.1

Overflow quantity  
min. l/h : 100  
Tolerance l/h : ± 10.0

Test nozzle holde  
assembly : 1 688 901 101

Opening pressure  
bar : 208.5  
Tolerance bar : ± 1.5

Test lines : 1 680 750 008

Outside diameter : 6.0

x inside diameter : 2.0  
x length mm : 600

## REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

## BEGINNING OF DELIVERY

Test pressure bar : 26.0  
Tolerance bar : ± 1.0

Prestroke mm : 4.55  
Tolerance mm : ± 0.05

test only : ± 0.10

Rack travel in mm : 20.50  
Tolerance mm : ± 0.50

Firing order : 1- 5- 3- 6- 2-  
: 4

Phasing : 0-60-120-180-240  
: -300  
Tolerance : ± 0.30  
Check  
tolerance °NW : ± 0.50

Start of delivery mark

Barrel no. : 1

## BASIC SETTING

Rated speed rpm : 1300

Rack travel in mm : 15.40  
Tolerance mm : ± 0.05

Del. quantity  
cm<sup>3</sup>/1000 strokes : 172.0

Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  1.0

Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  3.0

Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 5.0

Check tolerance  
cm<sup>3</sup>/1000S. : 9.0

Rated speed rpm : 350

Rack travel in mm : 9.80  
Tolerance mm :  $\pm$  0.30

Del. quantity  
cm<sup>3</sup>/1000 strokes : 28.0

Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  2.5

Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  5.0

Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 6.0

Check tolerance  
cm<sup>3</sup>/1000S. : 10.0

#### (B) SETTING OF INJECTION PUMP WITH GOVERNOR

##### GUIDE SLEEVE TRAVEL

Rated speed rpm : 350  
guide sleeve  
travel mm : 1.46  
Tolerance mm :  $\pm$  0.20

Rated speed rpm : 1422  
guide sleeve  
travel mm : 10.03  
Tolerance mm :  $\pm$  0.15

Rated speed rpm : 996  
guide sleeve  
travel mm : 6.78  
Tolerance mm :  $\pm$  0.25

Rated speed rpm : 610  
guide sleeve  
travel mm : 3.96  
Tolerance mm :  $\pm$  0.25

Rated speed rpm : 1730  
guide sleeve  
travel mm : 13.50  
Tolerance mm :  $\pm$  0.50

##### GUIDE SLEEVE POSITION

Rated speed rpm : 1500

Rack travel in mm : 14.40  
Tolerance mm :  $\pm$  1.50

##### FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1300

Aneroid pressure  
hPa : 1500

Del. quantity  
cm<sup>3</sup>/1000 strokes : 172.0

Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  1.0

Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  3.0

Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 5.0

Check tolerance  
cm<sup>3</sup>/1000S. : 9.0

##### RATED SPEED

control lever  
position degree : 66.0  
tolerance degree :  $\pm$  4.0

control lever  
position degree : 301.0  
tolerance degree :  $\pm$  4.0

rack travel mm : 14.40  
Rated speed rpm : 1410  
Tolerance 1/min :  $\pm$  5

rack travel mm : 4.00  
Rated speed rpm : 1590  
Tolerance 1/min :  $\pm$  15

rack travel mm : 0.50  
Tolerance mm :  $\pm$  0.50  
Rated speed rpm : 1680

##### LOW IDLE

control lever  
position degree : 262.0  
tolerance degree :  $\pm$  4.0

control lever  
position degree : 27.0  
tolerance degree :  $\pm$  4.0

#### Testing:

Rated speed rpm : 350  
rack travel mm : 9.80  
Tolerance mm :  $\pm$  0.10

Rated speed rpm : 250

CRT mm min. :  $>$  11.00

Rated speed rpm : 400

---

#### TORQUE CONTROL

Rated speed rpm : 1300  
rack travel mm : 15.40  
Tolerance mm :  $\pm$  0.05

Rated speed rpm : 780  
rack travel mm : 13.90  
Tolerance mm :  $\pm$  0.15

Rated speed rpm : 1000  
rack travel mm : 14.30  
Tolerance mm :  $\pm$  0.20

---

#### ANEROID/ALTITUDE COMPENSATOR TEST

##### SETTING

Rated speed rpm : 1300  
Pressure hPa : 1500  
rack travel mm : 15.40  
Tolerance mm :  $\pm$  0.05

##### MEASUREMENT

Pressure hPa : -  
Rated speed rpm : 1300  
rack travel mm : 12.10  
Tolerance mm :  $\pm$  0.20

Rated speed rpm : 1300

Pressure hPa : 425  
rack travel mm : 12.80  
Tolerance mm :  $\pm$  0.15

Pressure hPa : 775  
rack travel mm : 14.60  
Tolerance mm :  $\pm$  0.05

---

#### START CUT-OUT

Rated speed rpm :  $>$  270  
Check  
speed 1/min :  $>$  300

---

#### FUEL DELIVERY CHARACTERISTICS

Aneroid pressure  
hPa : 1500  
Rated speed rpm : 780  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 152.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  2.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  5.0  
Speed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

Aneroid pressure  
hPa : 1500  
Rated speed rpm : 1000  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 159.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  3.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  6.0

Aneroid pressure  
hPa : -  
Rated speed rpm : 500  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 111.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  1.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  4.0

---

#### BREAKAWAY

Rack travel in mm : 14.40  
Rated speed rpm : 1410  
Tolerance 1/min :  $\pm$  5

---

#### STARTING FUEL DELIVERY

Rated speed rpm : 100



Del. quantity  
cm<sup>3</sup>/1000 strokes : 200.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : +- 15.0  
Check tolerance  
cm<sup>3</sup>/1000S. : +- 19.0

---

#### LOW IDLE

Rated speed rpm : 350  
rack travel mm : 9.80  
Tolerance mm : +- 0.30  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 28.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : +- 2.5  
Check tolerance  
cm<sup>3</sup>/1000S. : +- 5.0  
Speed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 6.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 10.0

---

End of test specification sheet

# BOSCH INJ. PUMP TEST SPECIFICATIONS

## Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 28.09.95  
Test oil : ISO 4113

Combination No. : 0 402 066 704

Injection pump  
Pump designation : PES6P120A120RS3358  
EP type number : 0 412 026 784

Governor  
Governor design. : RSV475...1250P2A613  
Governor no. : 0 421 833 501

Cust. part No. : 3927359

Customer-spec. information  
Customer : CDC  
Motor : 6BTA-590 ELITE  
Power KW : 149.0

## TEST BENCH REQUIREMENTS

Inlet line : 3.2

Test oil inlet  
temp. °C : 40  
Tolerance °C : ± 2.0

Overflow valve : 2 417 413 086

Inlet press. bar : 1.5

Test nozzle holde  
assembly : 1 688 901 103

Opening pressure  
bar : 208.5  
Tolerance bar : ± 1.5

Test lines : 1 680 750 089

Outside diameter : 8.0

x inside diameter : 3.0  
x length mm : 600

## REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

## BEGINNING OF DELIVERY

Test pressure bar : 26.0  
Tolerance bar : ± 1.0

Prestroke mm : 2.85  
Tolerance mm : ± 0.05

test only : ± 0.10

Rack travel in mm : 10.50  
Tolerance mm : ± 1.50

Firing order : 1- 5- 3- 6- 2-  
: 4

Phasing : 0-60-120-180-240  
: -300

Tolerance : ± 0.30  
Check  
tolerance °NW : ± 0.50

## Start of delivery blocking

\*NW after s.o.d. : 7.50  
Tolerance : ± 0.50  
Check  
tolerance °NW : ± 0.75

Barrel no. : 1

## BASIC SETTING

Rated speed rpm : 1250

Rack travel in mm : 11.90  
Tolerance mm : ± 0.05

Del. quantity  
cm<sup>3</sup>/1000 strokes : 152.0

Tolerance  
cm<sup>3</sup>/1000 strokes : ± 1.0

Check tolerance  
cm<sup>3</sup>/1000S. : ± 3.0

Speed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 4.0

Check tolerance  
cm<sup>3</sup>/1000S. : 7.5

Rated speed rpm : 475

Rack travel in mm : 5.50  
Tolerance mm : ± 0.30

Del. quantity  
cm<sup>3</sup>/1000 strokes : 22.0

Tolerance  
cm<sup>3</sup>/1000 strokes : ± 2.0

Check tolerance  
cm<sup>3</sup>/1000S. : ± 4.5

Speed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 6.0

Check tolerance  
cm<sup>3</sup>/1000S. : 9.0

#### (B) SETTING OF INJECTION PUMP WITH GOVERNOR

##### GUIDE SLEEVE POSITION

Rated speed rpm : 800

Rack travel in mm : 0.50  
Tolerance mm : ± 0.20

##### FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1250  
Aneroid pressure  
hPa : 1500

Del. quantity  
cm<sup>3</sup>/1000 strokes : 152.0

Tolerance  
cm<sup>3</sup>/1000 strokes : ± 1.0

Check tolerance  
cm<sup>3</sup>/1000S. : ± 3.0

Speed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 4.0

Check tolerance  
cm<sup>3</sup>/1000S. : 7.5

##### RATED SPEED

control lever  
position degree : 110.0  
tolerance degree : ± 4.0

rack travel mm : 11.90  
Rated speed rpm : 1320  
Tolerance 1/min : ± 5

rack travel mm : 4.00  
Rated speed rpm : 1420  
Tolerance 1/min : ± 15

rack travel mm : 0.85  
Tolerance mm : ± 0.55  
Rated speed rpm : 1500

##### LOW IDLE

control lever  
position degree : 84.0  
tolerance degree : ± 4.0

##### Testing:

Rated speed rpm : 475  
rack travel mm : 5.50  
Tolerance mm : ± 0.10

rack travel mm : 2.00  
Rated speed rpm : 570  
Tolerance 1/min : ± 30

##### SET IDLE AUXILIARY SPRING

rack travel mm : 2.00

##### TORQUE CONTROL

Rated speed rpm : 1250  
rack travel mm : 11.90  
Tolerance mm : ± 0.05

Rated speed rpm : 750  
rack travel mm : 11.90  
Tolerance mm : ± 0.10

---

ANEROID/ALTITUDE  
COMPENSATOR TEST

SETTING

Rated speed rpm : 500  
Pressure hPa : 1500  
rack travel mm : 11.90  
Tolerance mm :  $\pm$  0.05

MEASUREMENT

Pressure hPa : -  
Rated speed rpm : 500  
rack travel mm : 9.10  
Tolerance mm :  $\pm$  0.20

Rated speed rpm : 500

Pressure hPa : 975  
rack travel mm : 11.20  
Tolerance mm :  $\pm$  0.20

Pressure hPa : 575  
rack travel mm : 9.50  
Tolerance mm :  $\pm$  0.05

---

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure  
hPa : 1500  
Rated speed rpm : 750  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 170.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  3.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  6.0  
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

Aneroid pressure  
hPa : -  
Rated speed rpm : 500  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 99.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  2.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  4.0

---

BREAKAWAY

Rack travel in mm : 11.90  
Rated speed rpm : 1320  
Tolerance 1/min :  $\pm$  5

---

STARTING FUEL DELIVERY

Rated speed rpm : 100  
rack travel mm : 20.25  
Tolerance mm :  $\pm$  0.75  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 165.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  20.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  25.0

---

LOW IDLE

Rated speed rpm : 475  
rack travel mm : 5.50  
Tolerance mm :  $\pm$  0.30  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 22.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  2.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  4.5  
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 6.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 9.0

---

End of test specification sheet

# BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 27.09.95  
Test oil : ISO 4113

Combination No. : 0 402 066 707

Injection pump  
Pump designation : PES6P120A120RS3358  
EP type number : 0 412 026 784

Governor  
Governor design. : RSV475...1100P2A618  
Governor no. : 0 421 833 513

Cust. part No. : 3927356

Customer-spec. information  
Customer : CDC  
Motor : 6BTA ELITE  
Power KW : 136.0

## TEST BENCH REQUIREMENTS

Inlet line : 3.2

Test oil inlet  
temp. °C : 40  
Tolerance °C : ± 2.0

Overflow valve : 2 417 413 086

Inlet press. bar : 1.5

Test nozzle holder  
assembly : 1 688 901 103

Opening pressure  
bar : 208.5  
Tolerance bar : ± 1.5

Test lines : 1 680 750 089

Outside diameter : 8.0

x inside diameter : 3.0  
x length mm : 600

## REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

## BEGINNING OF DELIVERY

Test pressure bar : 26.0  
Tolerance bar : ± 1.0

Prestroke mm : 2.85  
Tolerance mm : ± 0.05

test only : ± 0.10

Rack travel in mm : 10.50  
Tolerance mm : ± 1.50

Firing order : 1- 5- 3- 6- 2-  
: 4

Phasing : 0-60-120-180-240  
: -300

Tolerance : ± 0.30  
Check  
tolerance \*NW : ± 0.50

Start of delivery blocking

\*NW after s.o.d. : 6.75  
Tolerance : ± 0.50  
Check  
tolerance \*NW : ± 0.75

Barrel no. : 1

## BASIC SETTING

Rated speed rpm : 1100

Rack travel in mm : 12.00  
Tolerance mm : ± 0.05

Del. quantity  
cm<sup>3</sup>/1000 strokes : 155.5

Tolerance  
cm<sup>3</sup>/1000 strokes : ± 1.0

Check tolerance  
cm<sup>3</sup>/1000S. : ± 3.0

Spread  
Tolerance  
cm<sup>3</sup>/1000 strokes : 4.0

Check tolerance  
cm<sup>3</sup>/1000S. : 7.5

Rated speed rpm : 475

Rack travel in mm : 5.60  
Tolerance mm : ± 0.30

Del. quantity  
cm<sup>3</sup>/1000 strokes : 24.0

Tolerance  
cm<sup>3</sup>/1000 strokes : ± 2.0

Check tolerance  
cm<sup>3</sup>/1000S. : ± 4.5

Spread  
Tolerance  
cm<sup>3</sup>/1000 strokes : 6.0

Check tolerance  
cm<sup>3</sup>/1000S. : 9.0

#### (B) SETTING OF INJECTION PUMP WITH GOVERNOR

##### GUIDE SLEEVE POSITION

Rated speed rpm : 800

Rack travel in mm : 0.50  
Tolerance mm : ± 0.20

governor spring  
pre-tension  
click setting x : 2.75

##### FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1100  
Aneroid pressure  
hPa : 1500  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 155.5  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 1.0

Check tolerance  
cm<sup>3</sup>/1000S. : ± 3.0  
Spread  
Tolerance  
cm<sup>3</sup>/1000 strokes : 4.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 7.5

##### RATED SPEED

control lever  
position degree : 100.0  
tolerance degree : ± 4.0

rack travel mm : 11.00  
Rated speed rpm : 1145  
Tolerance 1/min : ± 5

rack travel mm : 4.00  
Rated speed rpm : 1230  
Tolerance 1/min : ± 15

rack travel mm : 0.85  
Tolerance mm : ± 0.55  
Rated speed rpm : 1350

##### LOW IDLE

control lever  
position degree : 79.0  
tolerance degree : ± 4.0

##### Testing:

Rated speed rpm : 475  
rack travel mm : 5.60  
Tolerance mm : ± 0.10

rack travel mm : 2.00  
Rated speed rpm : 550  
Tolerance 1/min : ± 30

##### SET IDLE AUXILIARY SPRING

rack travel mm : 2.00

##### TORQUE CONTROL

Rated speed rpm : 1100  
rack travel mm : 12.00  
Tolerance mm : ± 0.05

Rated speed rpm : 750  
rack travel mm : 12.00  
Tolerance mm : ± 0.10

---

ANEROID/ALTITUDE  
COMPENSATOR TEST

SETTING

Rated speed rpm : 500  
Pressure hPa : 1500  
rack travel mm : 12.00  
Tolerance mm :  $\pm$  0.05

MEASUREMENT

Pressure hPa : -  
Rated speed rpm : 500  
rack travel mm : 9.60  
Tolerance mm :  $\pm$  0.20

Rated speed rpm : 500

Pressure hPa : 900  
rack travel mm : 11.60  
Tolerance mm :  $\pm$  0.20

Pressure hPa : 600  
rack travel mm : 10.50  
Tolerance mm :  $\pm$  0.05

---

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure  
hPa : 1500  
Rated speed rpm : 750  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 170.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  3.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  6.0  
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

Aneroid pressure  
hPa : -  
Rated speed rpm : 500  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 108.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  2.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  4.0

---

BREAKAWAY

Rack travel in mm : 11.00  
Rated speed rpm : 1145  
Tolerance 1/min :  $\pm$  5

---

STARTING FUEL DELIVERY

Rated speed rpm : 100  
rack travel mm : 20.25  
Tolerance mm :  $\pm$  0.75  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 165.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  20.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  25.0

---

LOW IDLE

Rated speed rpm : 475  
rack travel mm : 5.60  
Tolerance mm :  $\pm$  0.30  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 24.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  2.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  4.5  
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 6.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 9.0

---

End of test specification sheet

# BOSCH INJ. PUMP TEST SPECIFICATIONS

## Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 28.09.95  
Test oil : ISO 4113

Combination No. : 0 402 636 800

Injection pump  
Pump designation : PE6P130A720/3LS7827  
EP type number : 0 412 636 814

Governor  
Governor design. : RQV400...1150PA937  
Governor no. : 0 421 813 823

Cust. part No. :

## Customer-spec. information

Customer : IVECO-FIAT  
Motor : 8262.43.001

## TEST BENCH REQUIREMENTS

Inlet line : 4.2

Test oil inlet  
temp. °C : 40  
Tolerance °C : ± 2.0

Overflow valve : 1 417 413 025

Inlet press. bar : 1.5

Test nozzle holder  
assembly : 1 688 901 105

Opening pressure  
bar : 208.5  
Tolerance bar : ± 1.5

Test lines : 1 680 750 015

Outside diameter : 6.0

x inside diameter : 1.5

604

x length mm : 600

## REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

## BEGINNING OF DELIVERY

Test pressure bar : 26.0  
Tolerance bar : ± 1.0

Prestroke mm : 5.15  
Tolerance mm : ± 0.05

test only : ± 0.10

Rack travel in mm : 10.50  
Tolerance mm : ± 1.50

Firing order : 1- 6- 5- 4- 3-  
: 2

Phasing : 0-75-120-195-240  
: -315  
Tolerance : ± 0.30  
Check  
tolerance °NW : ± 0.50

Start of delivery mark

Barrel no. : 1

## BASIC SETTING

Rated speed rpm : 1150

Rack travel in mm : 11.75  
Tolerance mm : ± 0.05

Del. quantity  
cm<sup>3</sup>/1000 strokes : 269.5

Tolerance  
cm<sup>3</sup>/1000 strokes : ± 1.5

Check tolerance  
cm<sup>3</sup>/1000s. : ± 5.0

Speed



Tolerance  
cm<sup>3</sup>/1000 strokes : 6.0

Check tolerance  
cm<sup>3</sup>/1000S. : 10.0

Rated speed rpm : 400

Rack travel in mm : 5.00  
Tolerance mm :  $\pm$  0.20

Del. quantity  
cm<sup>3</sup>/1000 strokes : 24.0

Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  3.0

Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  7.0

Spread  
Tolerance  
cm<sup>3</sup>/1000 strokes : 10.0

Check tolerance  
cm<sup>3</sup>/1000S. : 14.0

#### (B) SETTING OF INJECTION PUMP WITH GOVERNOR

##### GUIDE SLEEVE TRAVEL

Rated speed rpm : 400  
guide sleeve  
travel mm : 2.75  
Tolerance mm :  $\pm$  0.20

Rated speed rpm : 1204  
guide sleeve  
travel mm : 7.21  
Tolerance mm :  $\pm$  0.15

Rated speed rpm : 1150  
guide sleeve  
travel mm : 7.05  
Tolerance mm :  $\pm$  0.25

Rated speed rpm : 500  
guide sleeve  
travel mm : 4.50  
Tolerance mm :  $\pm$  0.25

Rated speed rpm : 650  
guide sleeve  
travel mm : 6.00  
Tolerance mm :  $\pm$  0.25

Rated speed rpm : 1390  
guide sleeve  
travel mm : 11.50  
Tolerance mm :  $\pm$  0.50

##### GUIDE SLEEVE POSITION

Rated speed rpm : 850

Rack travel in mm : 17.50  
Tolerance mm :  $\pm$  1.00

##### FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1150  
Aneroid pressure  
hPa : 1200

Del. quantity  
cm<sup>3</sup>/1000 strokes : 269.5

Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  1.5

Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  5.0

Spread  
Tolerance  
cm<sup>3</sup>/1000 strokes : 6.0

Check tolerance  
cm<sup>3</sup>/1000S. : 10.0

##### RATED SPEED

control lever  
position degree : 113.0  
tolerance degree :  $\pm$  4.0

rack travel mm : 10.70  
Rated speed rpm : 1195  
Tolerance 1/min :  $\pm$  5

rack travel mm : 4.00  
Rated speed rpm : 1255  
Tolerance 1/min :  $\pm$  15

rack travel mm : 0.50  
Tolerance mm :  $\pm$  0.50  
Rated speed rpm : 1350

rack travel mm : 4.00

##### LOW IDLE

control lever  
position degree : 72.0  
tolerance degree :  $\pm$  4.0

##### Testing:

Rated speed rpm : 400

rack travel mm : 5.00  
Tolerance mm :  $\pm$  0.10  
  
Rated speed rpm : 100  
  
CRT mm min. :  $>$  6.50  
  
Rated speed rpm : 475

---

#### TORQUE CONTROL

Rated speed rpm : 1150  
rack travel mm : 11.75  
Tolerance mm :  $\pm$  0.05  
  
Rated speed rpm : 700  
rack travel mm : 11.75  
Tolerance mm :  $\pm$  0.05

---

#### ANEROID/ALTITUDE COMPENSATOR TEST

##### SETTING

Rated speed rpm : 500  
Pressure hPa : 1200  
rack travel mm : 11.75  
Tolerance mm :  $\pm$  0.05

##### MEASUREMENT

Pressure hPa : -  
Rated speed rpm : 500  
rack travel mm : 8.60  
Tolerance mm :  $\pm$  0.10

Rated speed rpm : 500  
  
Pressure hPa : 650  
rack travel mm : 10.75  
Tolerance mm :  $\pm$  0.05

Pressure hPa : 250  
rack travel mm : 9.30  
Tolerance mm :  $\pm$  0.10

---

#### FUEL DELIVERY CHARACTERISTICS

Aneroid pressure  
hPa : 1200  
Rated speed rpm : 700  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 278.5  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  3.5

Check tolerance  
cm<sup>3</sup>/1000s. :  $\pm$  7.0

Aneroid pressure  
hPa : -  
Rated speed rpm : 500  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 166.5  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  1.5  
Check tolerance  
cm<sup>3</sup>/1000s. :  $\pm$  5.0

---

#### BREAKAWAY

Rack travel in mm : 10.70  
Rated speed rpm : 1195  
Tolerance 1/min :  $\pm$  5

---

#### STARTING FUEL DELIVERY

Rated speed rpm : 100

---

#### LOW IDLE

Rated speed rpm : 400  
rack travel mm : 5.00  
Tolerance mm :  $\pm$  0.20  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 24.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  3.0  
Check tolerance  
cm<sup>3</sup>/1000s. :  $\pm$  7.0  
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 10.0  
Check tolerance  
cm<sup>3</sup>/1000s. : 14.0

---

End of test specification sheet

# BOSCH INJ. PUMP TEST SPECIFICATIONS

## Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 04.10.95  
Test oil : ISO 4113

Combination No. : 0 402 640 842

Injection pump  
Pump designation : PE12P120A520/5RS7304  
EP type number : 0 412 620 838

Governor  
Governor design. : RQV300...550/1050PA1  
: 093  
Governor no. : 0 421 814 067

Cust. part No. :

Customer-spec. information  
Customer : MWM  
Motor : TBD234-FAUN

## TEST BENCH REQUIREMENTS

Inlet line : 3.1,3.2

Test oil inlet  
temp. °C : 40  
Tolerance °C : +- 2.0

Overflow valve : 1 417 413 025

Overflow quantity  
min. l/h : 170  
Tolerance l/h : +- 10.0

Test nozzle holde  
assembly : 1 688 901 019

Opening pressure  
bar : 208.5  
Tolerance bar : +- 1.5

Test lines : 1 680 750 075

Outside diameter : 8.0

x inside diameter : 3.0  
x length mm : 1000

## REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

## BEGINNING OF DELIVERY

Test pressure bar : 26.0  
Tolerance bar : +- 1.0

Prestroke mm : 5.20  
Tolerance mm : +- 0.05

test only : +- 0.10

Rack travel in mm : 19.50  
Tolerance mm : +- 1.50

Firing order : 1- 2- 9-10- 5- 6  
: - 11- 12- 3- 4  
: - 7- 8

Phasing : 0-30-60-90-120-150  
: -180-210-240-270  
: -300-330  
Tolerance : +- 0.30  
Check  
tolerance °NW : +- 0.50

Start of delivery mark

Barrel no. : 1

## BASIC SETTING

Rated speed rpm : 1050

Rack travel in mm : 13.60  
Tolerance mm : +- 0.05

Del. quantity  
cm<sup>3</sup>/1000 strokes : 235.0

Tolerance  
cm<sup>3</sup>/1000 strokes : +- 1.0

---

Check tolerance  
cm<sup>3</sup>/1000S. : + 4.0

---

Speed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 6.0

---

Check tolerance  
cm<sup>3</sup>/1000S. : 9.0

Rated speed rpm : 300

Rack travel in mm : 6.75  
Tolerance mm : + 0.20

Del. quantity  
cm<sup>3</sup>/1000 strokes : 38.0

Tolerance  
cm<sup>3</sup>/1000 strokes : + 5.0

Check tolerance  
cm<sup>3</sup>/1000S. : + 8.0

Speed  
Tolerance

cm<sup>3</sup>/1000 strokes : 8.0

Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

#### (B) SETTING OF INJECTION PUMP WITH GOVERNOR

---

##### GUIDE SLEEVE TRAVEL

Rated speed rpm : 300  
guide sleeve  
travel mm : 1.30  
Tolerance mm : + 0.25

Rated speed rpm : 1107  
guide sleeve  
travel mm : 6.75  
Tolerance mm : + 0.25

Rated speed rpm : 1050  
guide sleeve  
travel mm : 6.00  
Tolerance mm : + 0.25

Rated speed rpm : 586  
guide sleeve  
travel mm : 5.55  
Tolerance mm : + 0.25

Rated speed rpm : 636  
guide sleeve  
travel mm : 6.00  
Tolerance mm : + 0.25

Rated speed rpm : 500

guide sleeve  
travel mm : 6.00  
Tolerance mm : + 0.25

Rated speed rpm : 1260  
guide sleeve  
travel mm : 11.50  
Tolerance mm : + 0.50

---

##### GUIDE SLEEVE POSITION

Rated speed rpm : 1190

Rack travel in mm : 12.60  
Tolerance mm : + 2.00

---

##### FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1050  
Aneroid pressure  
hPa : 1250

Del. quantity  
cm<sup>3</sup>/1000 strokes : 235.0

Tolerance  
cm<sup>3</sup>/1000 strokes : + 1.0

Check tolerance  
cm<sup>3</sup>/1000S. : + 4.0

Speed  
Tolerance

cm<sup>3</sup>/1000 strokes : 6.0

Check tolerance  
cm<sup>3</sup>/1000S. : 9.0

---

##### RATED SPEED

control lever  
position degree : 51.0  
tolerance degree : + 4.0

control lever  
position degree : 115.0  
tolerance degree : + 4.0

rack travel mm : 12.60  
Rated speed rpm : 1095  
Tolerance 1/min : + 5

rack travel mm : 4.00  
Rated speed rpm : 1155  
Tolerance 1/min : + 15

rack travel mm : 0.50  
Tolerance mm : + 0.50  
Rated speed rpm : 1300

---

## LOW IDLE

control lever  
position degree : 85.0  
tolerance degree :  $\pm$  4.0

control lever  
position degree : 20.0  
tolerance degree :  $\pm$  4.0

### Testing:

Rated speed rpm : 300  
rack travel mm : 6.75  
Tolerance mm :  $\pm$  0.10

Rated speed rpm : 200

CRT mm min. :  $>$  8.80

Rated speed rpm : 300

---

## TORQUE CONTROL

Rated speed rpm : 1050  
rack travel mm : 13.60  
Tolerance mm :  $\pm$  0.05

Rated speed rpm : 800  
rack travel mm : 13.60  
Tolerance mm :  $\pm$  0.05

Rated speed rpm : 500  
rack travel mm : 14.70  
Tolerance mm :  $\pm$  0.05

---

## ANEROID/ALTITUDE COMPENSATOR TEST

### SETTING

Rated speed rpm : 500  
Pressure hPa : 2000  
rack travel mm : 14.70  
Tolerance mm :  $\pm$  0.05

### MEASUREMENT

Pressure hPa : -  
Rated speed rpm : 500  
rack travel mm : 10.00  
Tolerance mm :  $\pm$  0.20

Rated speed rpm : 500

Pressure hPa : 225  
rack travel mm : 10.70  
Tolerance mm :  $\pm$  0.25

Pressure hPa : 595  
rack travel mm : 12.20  
Tolerance mm :  $\pm$  0.05

Pressure hPa : 1250  
rack travel mm : 13.60  
Tolerance mm :  $\pm$  0.05

Pressure hPa : 1450  
rack travel mm : 13.95  
Tolerance mm :  $\pm$  0.25

---

## START CUT-OUT

Rated speed rpm :  $<$  220  
Check  
speed 1/min :  $<$  240

---

## FUEL DELIVERY CHARACTERISTICS

Aneroid pressure  
hPa : 1250  
Rated speed rpm : 800  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 234.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  3.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  6.0

Aneroid pressure  
hPa : -  
Rated speed rpm : 500  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 144.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  2.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  4.0

---

## BREAKAWAY

Rack travel in mm : 12.60  
Rated speed rpm : 1095  
Tolerance 1/min :  $\pm$  5

---

## STARTING FUEL DELIVERY

Rated speed rpm : 100

rack travel mm : 20.50  
Tolerance mm :  $\pm$  0.50  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 274.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  10.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  14.0

---

LOW IDLE

Rated speed rpm : 300  
rack travel mm : 6.75  
Tolerance mm :  $\pm$  0.20  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 38.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  5.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  8.0  
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

---

End of test specification sheet

# BOSCH INJ. PUMP TEST SPECIFICATIONS

## Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 12.09.95

Test oil : ISO 4113

Combination No. : 0 402 646 657

## Injection pump

Pump designation : PE6P130A320RS7368

EP type number : 0 412 636 836

## Governor

Governer design. : RQV250...1125PA1210K

Governer no. : 0 421 815 460

Cust. part No. : 866737-P03 V. 05/95

## Customer-spec. information

Customer : PENTA

Motor : TAMD 122 P

Power KW : 426.0

## TEST BENCH REQUIREMENTS

Inlet line : 3.2

Vibration  
damper

(RoBo diaphragm) : 4.1

Test oil inlet

temp. °C : 40

Tolerance °C : ± 2.0

Overflow valve : 2 417 413 077

Inlet press. bar : 2.5

Tolerance bar : ± 0.1

Test nozzle holde  
assembly

: 1 688 901 105

Opening pressure  
bar

: 208.5

Tolerance bar : ± 1.5

Test lines : 1 680 750 089

Outside diameter : 8.0

x inside diameter : 3.0

x length mm : 600

## REMARKS

## (A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values \_\_\_\_\_

## BEGINNING OF DELIVERY

Test pressure bar : 26.0

Tolerance bar : ± 1.0

Prestroke mm : 4.45

Tolerance mm : ± 0.05

test only : ± 0.10

Rack travel in mm : 7.00

Tolerance mm : ± 0.50

Firing order : 1- 5- 3- 6- 2-  
: 4

Phasing : 0-60-120-180-240

: -300

Tolerance : ± 0.30

Check

tolerance °Nw : ± 0.75

## Start of delivery mark

Barrel no. : 1

## BASIC SETTING

Rated speed rpm : 1125

Rack travel in mm : 11.50

Tolerance mm : ± 0.05

Del. quantity  
cm<sup>3</sup>/1000 strokes : 318.0

Tolerance  
cm<sup>3</sup>/1000 strokes : ± 1.5

Check tolerance  
cm<sup>3</sup>/1000S. : ± 5.0

Speed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 9.0

Check tolerance  
cm<sup>3</sup>/1000S. : 13.0

Del. quantity  
cm<sup>3</sup>/1000 strokes : 20.0

Tolerance  
cm<sup>3</sup>/1000 strokes : ± 3.0

Check tolerance  
cm<sup>3</sup>/1000S. : ± 6.0

Speed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 7.0

Check tolerance  
cm<sup>3</sup>/1000S. : 11.0

#### (B) SETTING OF INJECTION PUMP WITH GOVERNOR

##### GUIDE SLEEVE TRAVEL

Rated speed rpm : 300  
guide sleeve  
travel mm : 1.93  
Tolerance mm : ± 0.25

Rated speed rpm : 1157  
guide sleeve  
travel mm : 11.17  
Tolerance mm : ± 0.25

Rated speed rpm : 823  
guide sleeve  
travel mm : 7.14  
Tolerance mm : ± 0.25

Rated speed rpm : 325  
guide sleeve  
travel mm : 2.31  
Tolerance mm : ± 0.25

Rated speed rpm : 375  
guide sleeve  
travel mm : 2.96  
Tolerance mm : ± 0.25

Rated speed rpm : 490  
guide sleeve  
travel mm : 3.90  
Tolerance mm : ± 0.25

Rated speed rpm : 1320  
guide sleeve  
travel mm : 13.50  
Tolerance mm : ± 0.50

##### GUIDE SLEEVE POSITION

Rated speed rpm : 1200  
Rack travel in mm : 10.50  
Tolerance mm : ± 2.00

##### FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1125  
Aneroid pressure  
hPa : 2000  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 318.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 1.5  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 5.0  
Speed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 9.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 13.0

##### RATED SPEED

control lever  
position degree : 70.0  
tolerance degree : ± 4.0

control lever  
position degree : 122.0  
tolerance degree : ± 4.0

rack travel mm : 10.50  
Rated speed rpm : 1165  
Tolerance 1/min : ± 5

rack travel mm : 4.00  
Rated speed rpm : 1235  
Tolerance 1/min : ± 15

rack travel mm : 0.50  
Tolerance mm : ± 0.50  
Rated speed rpm : 1300



---

## LOW IDLE

control lever  
position degree : 68.0  
tolerance degree :  $\pm$  4.0

control lever  
position degree : 16.0  
tolerance degree :  $\pm$  4.0

### Testing:

Rated speed rpm : 260  
rack travel mm : 4.70  
Tolerance mm :  $\pm$  0.20

Rated speed rpm : 200

CRT mm min. :  $>$  5.90

Rated speed rpm : 330

---

## TORQUE CONTROL

Rated speed rpm : 1125  
rack travel mm : 11.50  
Tolerance mm :  $\pm$  0.05

Rated speed rpm : 700  
rack travel mm : 10.65  
Tolerance mm :  $\pm$  0.15

Rated speed rpm : 500  
rack travel mm : 9.45  
Tolerance mm :  $\pm$  0.15

---

## ANEROID/ALTITUDE COMPENSATOR TEST

### SETTING

Rated speed rpm : 1125  
Pressure hPa : 2000  
rack travel mm : 11.50  
Tolerance mm :  $\pm$  0.05

### MEASUREMENT

Pressure hPa : -  
Rated speed rpm : 500  
rack travel mm : 7.00  
Tolerance mm :  $\pm$  0.20

Rated speed rpm : 1125

Pressure hPa : 1300  
rack travel mm : 4.10  
Tolerance mm :  $\pm$  0.20

Pressure hPa : 120  
rack travel mm : 0.25  
Tolerance mm :  $\pm$  0.05

---

## FUEL DELIVERY CHARACTERISTICS

Aneroid pressure  
hPa : 2000  
Rated speed rpm : 700  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 315.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  3.0  
Check tolerance  
cm<sup>3</sup>/1000s. :  $\pm$  6.0  
Speed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 10.0  
Check tolerance  
cm<sup>3</sup>/1000s. : 14.0

Aneroid pressure  
hPa : 2000  
Rated speed rpm : 500  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 280.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  3.0  
Check tolerance  
cm<sup>3</sup>/1000s. :  $\pm$  6.0

Aneroid pressure  
hPa : -  
Rated speed rpm : 500  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 180.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  1.5  
Check tolerance  
cm<sup>3</sup>/1000s. :  $\pm$  5.0

---

## BREAKAWAY

Rack travel in mm : 10.50  
Rated speed rpm : 1165  
Tolerance 1/min :  $\pm$  5

---

## STARTING FUEL DELIVERY

Rated speed rpm : 100  
rack travel mm : 7.00  
Tolerance mm :  $\pm$  0.20  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 85.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  15.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  20.0

---

LOW IDLE

Del. quantity  
cm<sup>3</sup>/1000 strokes : 20.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  3.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  6.0  
Speed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 7.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 11.0

---

End of test specification sheet

# BOSCH INJ. PUMP TEST SPECIFICATIONS

## Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 28.09.95  
Test oil : ISO 4113

Combination No. : 0 402 736 889

Injection pump  
Pump designation : PES6P120A120RS7390  
EP type number : 0 412 726 945

Governor  
Governor design. : RQV350...1100PA1244K  
Governor no. : 0 421 815 477

Cust. part No. : 3282739

Customer-spec. information  
Customer : CUMMINS  
Motor : 6CTAA  
Power KW : 179.0

## TEST BENCH REQUIREMENTS

Inlet line : 3.2

Test oil inlet  
temp. °C : 40  
Tolerance °C : ± 2.0

Overflow valve : 2 417 413 086

Inlet press. bar : 1.5

Overflow quantity  
min. l/h : 90  
Tolerance l/h : ± 10.0

Test nozzle holde  
assembly : 1 688 901 101

Opening pressure  
bar : 208.5  
Tolerance bar : ± 1.5

Test lines : 1 680 750 008

Outside diameter : 6.0

x inside diameter : 2.0  
x length mm : 600

## REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

## BEGINNING OF DELIVERY

Test pressure bar : 26.0  
Tolerance bar : ± 1.0

Prestroke mm : 2.90  
Tolerance mm : ± 0.05

test only : ± 0.10

Rack travel in mm : 20.50  
Tolerance mm : ± 0.50

Firing order : 1- 5- 3- 6- 2-  
: 4

Phasing : 0-60-120-180-240  
: -300  
Tolerance : ± 0.30  
Check  
tolerance °NW : ± 0.50

Start of delivery blocking

\*NW after s.o.d. : 10.50  
Tolerance : ± 0.50  
Check  
tolerance °NW : ± 0.75

Barrel no. : 1

## BASIC SETTING

Rated speed rpm : 1100

Rack travel in mm : 13.00

Tolerance mm :  $\pm$  0.05

Del. quantity  
cm<sup>3</sup>/1000 strokes : 173.0

Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  1.0

Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  4.0

Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 5.0

Check tolerance  
cm<sup>3</sup>/1000S. : 9.0

Rated speed rpm : 350

Rack travel in mm : 4.60  
Tolerance mm :  $\pm$  0.30

Del. quantity  
cm<sup>3</sup>/1000 strokes : 18.0

Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  3.0

Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  5.0

Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 7.0

Check tolerance  
cm<sup>3</sup>/1000S. : 11.0

#### (B) SETTING OF INJECTION PUMP WITH GOVERNOR

##### GUIDE SLEEVE TRAVEL

Rated speed rpm : 350  
guide sleeve  
travel mm : 1.93  
Tolerance mm :  $\pm$  0.20

Rated speed rpm : 1159  
guide sleeve  
travel mm : 10.27  
Tolerance mm :  $\pm$  0.15

Rated speed rpm : 710  
guide sleeve  
travel mm : 5.79  
Tolerance mm :  $\pm$  0.25

Rated speed rpm : 420  
guide sleeve  
travel mm : 4.28  
Tolerance mm :  $\pm$  0.25

Rated speed rpm : 1380  
guide sleeve  
travel mm : 13.50  
Tolerance mm :  $\pm$  0.50

##### GUIDE SLEEVE POSITION

Rated speed rpm : 1195

Rack travel in mm : 12.00  
Tolerance mm :  $\pm$  1.30

##### FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1100  
Aneroid pressure  
hPa : 1500

Del. quantity  
cm<sup>3</sup>/1000 strokes : 173.0

Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  1.0

Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  4.0

Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 5.0

Check tolerance  
cm<sup>3</sup>/1000S. : 9.0

##### RATED SPEED

control lever  
position degree : 68.0  
tolerance degree :  $\pm$  4.0

control lever  
position degree : 122.0  
tolerance degree :  $\pm$  4.0

rack travel mm : 12.00  
Rated speed rpm : 1145  
Tolerance 1/min :  $\pm$  5

rack travel mm : 4.00  
Rated speed rpm : 1230  
Tolerance 1/min :  $\pm$  15

rack travel mm : 0.50  
Tolerance mm :  $\pm$  0.50  
Rated speed rpm : 1350

##### LOW IDLE

control lever  
position degree : 74.0  
tolerance degree :  $\pm$  4.0

control lever  
position degree : 20.0  
tolerance degree :  $\pm$  4.0

#### Testing:

Rated speed rpm : 350  
rack travel mm : 4.60  
Tolerance mm :  $\pm$  0.10

Rated speed rpm : 250  
CRT mm min. :  $>$  7.50

Rated speed rpm : 350

---

#### TORQUE CONTROL

Rated speed rpm : 1100  
rack travel mm : 13.00  
Tolerance mm :  $\pm$  0.05

Rated speed rpm : 700  
rack travel mm : 13.15  
Tolerance mm :  $\pm$  0.10

Rated speed rpm : 500  
rack travel mm : 12.25  
Tolerance mm :  $\pm$  0.15

---

#### ANEROID/ALTITUDE COMPENSATOR TEST

#### SETTING

Rated speed rpm : 700  
Pressure hPa : 1500  
rack travel mm : 13.20  
Tolerance mm :  $\pm$  0.05

#### MEASUREMENT

Pressure hPa : -  
Rated speed rpm : 700  
rack travel mm : 10.20  
Tolerance mm :  $\pm$  0.20

Rated speed rpm : 700

Pressure hPa : 140  
rack travel mm : 11.10  
Tolerance mm :  $\pm$  0.20

Pressure hPa : 300  
rack travel mm : 12.60  
Tolerance mm :  $\pm$  0.05

---

#### START CUT-OUT

Rated speed rpm :  $<$  290  
Check  
speed 1/min :  $<$  300

---

#### FUEL DELIVERY CHARACTERISTICS

Aneroid pressure  
hPa : 1500  
Rated speed rpm : 700  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 171.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  3.0  
Check tolerance  
cm<sup>3</sup>/1000s. :  $\pm$  6.0  
Speed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0  
Check tolerance  
cm<sup>3</sup>/1000s. : 12.0

Aneroid pressure  
hPa : -  
Rated speed rpm : 500  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 109.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  2.0  
Check tolerance  
cm<sup>3</sup>/1000s. :  $\pm$  4.0

---

#### BREAKAWAY

Rack travel in mm : 12.00  
Rated speed rpm : 1145  
Tolerance 1/min :  $\pm$  5

---

#### STARTING FUEL DELIVERY

Rated speed rpm : 100  
rack travel mm : 20.50  
Tolerance mm :  $\pm$  0.50  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 255.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  20.0

Check tolerance  
cm<sup>3</sup>/1000S. : ± 24.0

---

LOW IDLE

Rated speed rpm : 350  
rack travel mm : 4.60  
Tolerance mm : ± 0.30  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 18.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 3.0  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 5.0  
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 7.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 11.0

---

End of test specification sheet

# BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 27.09.95  
Test oil : ISO 4113

Combination No. : 0 402 746 603

Injection pump  
Pump designation : PES6P120A320RS7359  
EP type number : 0 412 726 925

Governor  
Governor design. : RQ275/1050PA999-7  
Governor no. : 0 421 801 799

Cust. part No. : CCEP 5153 66-224

## Customer-spec. information

Customer : RVI  
Motor : MIHR062045 A41  
Power KW : 185.0

## TEST BENCH REQUIREMENTS

Inlet line : 3.1

Test oil inlet  
temp. °C : 40  
Tolerance °C : ± 2.0

Overflow valve : 2 417 413 078

Inlet press. bar : 2.5  
Tolerance bar : ± 0.1

Test nozzle holder  
assembly : 1 688 901 101

Opening pressure  
bar : 208.5  
Tolerance bar : ± 1.5

Test lines : 1 680 750 008

Outside diameter : 6.0

x inside diameter : 2.0  
x length mm : 600

## REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

## BEGINNING OF DELIVERY

Test pressure bar : 26.0  
Tolerance bar : ± 1.0

Prestroke mm : 4.70  
Tolerance mm : ± 0.05

test only : ± 0.10

Rack travel in mm : 20.25  
Tolerance mm : ± 0.75

Firing order : 1- 5- 3- 6- 2-  
: 4

Phasing : 0-60-120-180-240  
: -300

Tolerance : ± 0.30  
Check  
tolerance °NW : ± 0.50

Start of delivery mark

Barrel no. : 1

## BASIC SETTING

Rated speed rpm : 600

Tolerance mm : ± 0.05

Del. quantity  
cm<sup>3</sup>/1000 strokes : 191.0

Tolerance  
cm<sup>3</sup>/1000 strokes : ± 1.0

Check tolerance  
cm<sup>3</sup>/1000s. : ± 4.0

Speed

Tolerance  
cm3/1000 strokes : 5.0

Check tolerance  
cm3/1000S. : 9.0

Rated speed rpm : 275

Rack travel in mm : -5.70  
Tolerance mm : +- 0.20

Del. quantity  
cm3/1000 strokes : 34.0

Tolerance  
cm3/1000 strokes : +- 2.0

Check tolerance  
cm3/1000S. : +- 5.0

Spread  
Tolerance  
cm3/1000 strokes : 8.0

Check tolerance  
cm3/1000S. : 12.0

#### (B) SETTING OF INJECTION PUMP WITH GOVERNOR

##### GUIDE SLEEVE TRAVEL

Rated speed rpm : 275  
guide sleeve  
travel mm : 1.75  
Tolerance mm : +- 0.20

Rated speed rpm : 1145  
guide sleeve  
travel mm : 6.55  
Tolerance mm : +- 0.15

Rated speed rpm : 1050  
guide sleeve  
travel mm : 6.00  
Tolerance mm : +- 0.10

Rated speed rpm : 594  
guide sleeve  
travel mm : 5.11  
Tolerance mm : +- 0.10

Rated speed rpm : 720  
guide sleeve  
travel mm : 6.00  
Tolerance mm : +- 0.10

Rated speed rpm : 1380  
guide sleeve  
travel mm : 11.50  
Tolerance mm : +- 0.50

##### GUIDE SLEEVE POSITION

Rated speed rpm : 600

Rack travel in mm : 20.00  
Tolerance mm : +- 0.80

##### FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 600

Aneroid pressure  
hPa : 1000

Del. quantity  
cm3/1000 strokes : 191.0

Tolerance  
cm3/1000 strokes : +- 1.0

Check tolerance  
cm3/1000S. : +- 4.0

Spread  
Tolerance  
cm3/1000 strokes : 5.0

Check tolerance  
cm3/1000S. : 9.0

##### RATED SPEED

control lever  
position degree : 274.0  
tolerance degree : +- 4.0

rack travel mm : -1.00  
Rated speed rpm : 1138  
Tolerance 1/min : +- 5

rack travel mm : -8.70  
Rated speed rpm : 1265  
Tolerance 1/min : +- 15

rack travel mm : -12.20  
Tolerance mm : +- 0.50  
Rated speed rpm : 1375

##### LOW IDLE

control lever  
position degree : 255.0  
tolerance degree : +- 4.0

##### Testing:

Rated speed rpm : 275  
rack travel mm : -5.70  
Tolerance mm : +- 0.10



rack travel mm : 2.00  
Rated speed rpm : 585  
Tolerance 1/min :  $\pm$  20

Rated speed rpm : 175  
CRT mm min. :  $>$  -3.80

---

#### TORQUE CONTROL

Rated speed rpm : 600  
Tolerance mm :  $\pm$  0.05

Rated speed rpm : 1050  
Tolerance mm :  $\pm$  0.10

---

#### ANEROID/ALTITUDE COMPENSATOR TEST

#### SETTING

Rated speed rpm : 500  
Pressure hPa : 1000

#### MEASUREMENT

Pressure hPa : -  
Rated speed rpm : 500  
rack travel mm : -1.10  
Tolerance mm :  $\pm$  0.20

Rated speed rpm : 500

Pressure hPa : 140  
rack travel mm : -0.66  
Tolerance mm :  $\pm$  0.15

Pressure hPa : 200  
rack travel mm : -0.25  
Tolerance mm :  $\pm$  0.05

---

#### START CUT-OUT

Rated speed rpm :  $<$  195  
Check  
speed 1/min :  $<$  215

---

#### FUEL DELIVERY CHARACTERISTICS

Aneroid pressure  
hPa : 1000  
Rated speed rpm : 1050  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 198.0

Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  3.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  6.0

Aneroid pressure  
hPa : -  
Rated speed rpm : 500  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 156.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  1.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  4.0

---

#### BREAKAWAY

Rack travel in mm : -1.00  
Rated speed rpm : 1138  
Tolerance 1/min :  $\pm$  5

---

#### STARTING FUEL DELIVERY

rack travel mm : 20.25  
Tolerance mm :  $\pm$  0.75  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 145.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  15.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  19.0

---

#### LOW IDLE

Rated speed rpm : 275  
rack travel mm : -5.70  
Tolerance mm :  $\pm$  0.20  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 34.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  2.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  5.0  
Speed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

End of test specification sheet



# BOSCH INJ. PUMP TEST SPECIFICATIONS

## Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 11.10.95  
Test oil : ISO 4113  
Combination No. : 0 401 876 804  
Injection pump  
Pump designation : PE6P120A320RS3339  
EP type number : 0 411 826 812  
Governor  
Governor design. : RSV325...1400POA590  
Governor no. : 0 421 833 450  
Cust. part No. : 3825199-P06 v. 9/95

Customer-spec. information  
Customer : PENTA  
Motor : TAMD63 L  
Power KW : 228.0

## TEST BENCH REQUIREMENTS

Inlet Line : 3.1  
Test oil inlet  
temp. °C : 40  
Tolerance °C : ± 2.0  
Overflow valve : 2 417 413 077  
Inlet press. bar : 1.5  
Tolerance bar : ± 0.1  
Test nozzle holde  
assembly : 1 688 901 101  
Opening pressure  
bar : 208.5  
Tolerance bar : ± 1.5  
Test lines : 1 680 750 008  
Outside diameter : 6.0

G23

x inside diameter : 2.0  
x length mm : 600

## REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

## BEGINNING OF DELIVERY

Test pressure bar : 31.0  
Tolerance bar : ± 1.0  
Prestroke mm : 3.55  
Tolerance mm : ± 0.05  
test only : ± 0.10  
Rack travel in mm : 6.40  
Tolerance mm : ± 0.50  
Firing order : 1- 5- 3- 6- 2-  
: 4  
Phasing : 0-60-120-180-240  
: -300  
Tolerance : ± 0.30  
Check  
tolerance °NW : ± 0.75  
Start of delivery mark  
Barrel no. : 1

## BASIC SETTING

Rated speed rpm : 1000  
Rack travel in mm : 8.90  
Tolerance mm : ± 0.05  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 141.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 1.0  
Check tolerance  
cm<sup>3</sup>/1000s. : ± 4.0

---

Spreed  
Tolerance  
cm3/1000 strokes : 5.0

---

Check tolerance  
cm3/1000S. : 9.0

Del. quantity  
cm3/1000 strokes : 23.0  
Tolerance  
cm3/1000 strokes : +- 3.0  
Check tolerance  
cm3/1000S. : +- 6.0

Spreed  
Tolerance  
cm3/1000 strokes : 5.0  
Check tolerance  
cm3/1000S. : 8.0

#### (B) SETTING OF INJECTION PUMP WITH GOVERNOR

---

##### GUIDE SLEEVE POSITION

Rated speed rpm : 800

Rack travel in mm : 0.55  
Tolerance mm : +- 0.25

governor spring  
pre-tension  
click setting x : 5.00

---

##### FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1000  
Aneroid pressure  
hPa : 2000  
Del. quantity  
cm3/1000 strokes : 141.0  
Tolerance  
cm3/1000 strokes : +- 1.0  
Check tolerance  
cm3/1000S. : +- 4.0  
Spreed  
Tolerance  
cm3/1000 strokes : 5.0  
Check tolerance  
cm3/1000S. : 9.0

---

##### RATED SPEED

control lever  
position degree : 68.0  
tolerance degree : +- 4.0

control lever  
position degree : 118.0  
tolerance degree : +- 4.0

rack travel mm : 7.90  
Rated speed rpm : 1470  
Tolerance 1/min : +- 5

rack travel mm : 4.00  
Rated speed rpm : 1530  
Tolerance 1/min : +- 15

rack travel mm : 0.85  
Tolerance mm : +- 0.55  
Rated speed rpm : 1630

---

##### LOW IDLE

control lever  
position degree : 82.0  
tolerance degree : +- 4.0

control lever  
position degree : 32.0  
tolerance degree : +- 4.0

##### Setting point w/out bumper spring

Rated speed rpm : 325  
rack travel mm : 3.30

##### Testing:

Rated speed rpm : 325  
rack travel mm : 3.80  
Tolerance mm : +- 0.20

rack travel mm : 2.00  
Rated speed rpm : 460  
Tolerance 1/min : +- 30

---

##### TORQUE CONTROL

Rated speed rpm : 1000  
rack travel mm : 8.90  
Tolerance mm : +- 0.05

Rated speed rpm : 1400  
rack travel mm : 8.90  
Tolerance mm : +- 0.10

---

ANEROID/ALTITUDE  
COMPENSATOR TEST

SETTING

Rated speed rpm : 500  
Pressure hPa : 2000  
rack travel mm : 8.90  
Tolerance mm :  $\pm$  0.05

MEASUREMENT

Pressure hPa : -  
Rated speed rpm : 500  
rack travel mm : 6.50  
Tolerance mm :  $\pm$  0.10

Rated speed rpm : 500

Pressure hPa : 850  
rack travel mm : 2.00  
Tolerance mm :  $\pm$  0.15

Pressure hPa : 490  
rack travel mm : 0.25  
Tolerance mm :  $\pm$  0.05

---

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure  
hPa : 2000  
Rated speed rpm : 1400  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 128.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  3.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  6.0

Aneroid pressure  
hPa : -  
Rated speed rpm : 500  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 93.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  1.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  4.0

---

BREAKAWAY

Rack travel in mm : 7.90  
Rated speed rpm : 1470

Tolerance 1/min :  $\pm$  5

---

STARTING FUEL DELIVERY

Rated speed rpm : 100  
rack travel mm : 12.00  
Tolerance mm :  $\pm$  0.25

---

LOW IDLE

Del. quantity  
cm<sup>3</sup>/1000 strokes : 23.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  3.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  6.0  
Speed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 5.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 8.0

---

End of test specification sheet

# BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 11.10.95  
Test oil : ISO 4113  
Combination No. : 0 401 876 809  
Injection pump  
Pump designation : PE6P120A32ORS3355  
EP type number : 0 411 826 814  
Governor  
Governor design. : RSV325...1200P1A605  
Governor no. : 0 421 833 487  
Cust. part No. : 3825834 P03 v. 9/95

Customer-spec. information  
Customer : PENTA  
Motor : TWD731ME  
Power KW : 175.0

## TEST BENCH REQUIREMENTS

Inlet line : 3.1  
Test oil inlet temp. °C : 40  
Tolerance °C : ± 2.0  
Overflow valve : 2 417 413 077  
Inlet press. bar : 1.5  
Tolerance bar : ± 0.1  
Test nozzle holder assembly : 1 688 901 101  
Opening pressure bar : 208.5  
Tolerance bar : ± 1.5  
Test lines : 1 680 750 008  
Outside diameter : 6.0

G26

x inside diameter : 2.0  
x length mm : 600

## REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

## BEGINNING OF DELIVERY

Test pressure bar : 26.0  
Tolerance bar : ± 1.0  
Prestroke mm : 3.45  
Tolerance mm : ± 0.05  
test only : ± 0.10  
Rack travel in mm : 7.40  
Tolerance mm : ± 0.50  
Firing order : 1- 5- 3- 6- 2-  
: 4  
Phasing : 0-60-120-180-240  
: -300  
Tolerance : ± 0.30  
Check tolerance \*NW : ± 0.75  
Start of delivery mark  
Barrel no. : 1

## BASIC SETTING

Rated speed rpm : 1200  
Rack travel in mm : 10.60  
Tolerance mm : ± 0.05  
Del. quantity cm3/1000 strokes : 126.0  
Tolerance cm3/1000 strokes : ± 1.0  
Check tolerance cm3/1000S. : ± 4.0

---

Speed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 7.0

---

Check tolerance  
cm<sup>3</sup>/1000s. : 11.0

Rated speed rpm : 325

Rack travel in mm : 4.40  
Tolerance mm :  $\pm$  0.20

Del. quantity  
cm<sup>3</sup>/1000 strokes : 24.0

Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  2.5

Check tolerance  
cm<sup>3</sup>/1000s. :  $\pm$  5.0

Speed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 3.0

Check tolerance  
cm<sup>3</sup>/1000s. : 6.0

#### (B) SETTING OF INJECTION PUMP WITH GOVERNOR

---

##### GUIDE SLEEVE POSITION

Rated speed rpm : 800

Rack travel in mm : 0.85  
Tolerance mm :  $\pm$  0.55

governor spring  
pre-tension  
click setting x : 6.00

---

##### FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1200  
Aneroid pressure  
hPa : 1500

Del. quantity  
cm<sup>3</sup>/1000 strokes : 126.0

Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  1.0

Check tolerance  
cm<sup>3</sup>/1000s. :  $\pm$  4.0

Speed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 7.0

Check tolerance  
cm<sup>3</sup>/1000s. : 11.0

---

##### RATED SPEED

control lever  
position degree : 71.0  
tolerance degree :  $\pm$  4.0

control lever  
position degree : 121.0  
tolerance degree :  $\pm$  4.0

rack travel mm : 9.60  
Rated speed rpm : 1235  
Tolerance 1/min :  $\pm$  5

rack travel mm : 4.00  
Rated speed rpm : 1280  
Tolerance 1/min :  $\pm$  15

rack travel mm : 0.85  
Tolerance mm :  $\pm$  0.55  
Rated speed rpm : 1400

---

##### LOW IDLE

control lever  
position degree : 81.0  
tolerance degree :  $\pm$  4.0

control lever  
position degree : 31.0  
tolerance degree :  $\pm$  4.0

Setting point w/out bumper spring

Rated speed rpm : 325  
rack travel mm : 3.90

##### Testing:

Rated speed rpm : 325  
rack travel mm : 4.40  
Tolerance mm :  $\pm$  0.10

rack travel mm : 2.00  
Rated speed rpm : 390  
Tolerance 1/min :  $\pm$  30

---

##### TORQUE CONTROL

Rated speed rpm : 1200  
rack travel mm : 10.60  
Tolerance mm :  $\pm$  0.05

Rated speed rpm : 700

rack travel mm : 10.60  
Tolerance mm :  $\pm$  0.10

---

ANEROID/ALTITUDE  
COMPENSATOR TEST

SETTING

Rated speed rpm : 500  
Pressure hPa : 1500  
rack travel mm : 10.60  
Tolerance mm :  $\pm$  0.05

MEASUREMENT

Pressure hPa : -  
Rated speed rpm : 500  
rack travel mm : 7.80  
Tolerance mm :  $\pm$  0.10

Rated speed rpm : 500

Pressure hPa : 850  
rack travel mm : 2.50  
Tolerance mm :  $\pm$  0.15

Pressure hPa : 260  
rack travel mm : 0.25  
Tolerance mm :  $\pm$  0.05

---

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure  
hPa : 1500  
Rated speed rpm : 700  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 148.5  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  3.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  6.0  
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 7.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 11.0

Aneroid pressure  
hPa : -  
Rated speed rpm : 500  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 87.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  1.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  4.0

---

BREAKAWAY

Rack travel in mm : 9.60  
Rated speed rpm : 1235  
Tolerance 1/min :  $\pm$  5

---

LOW IDLE

Rated speed rpm : 325  
rack travel mm : 4.40  
Tolerance mm :  $\pm$  0.20  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 24.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  2.5  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  5.0  
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 3.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 6.0

---

End of test specification sheet



# BOSCH INJ. PUMP TEST SPECIFICATIONS

## Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 11.10.95  
Test oil : ISO 4113  
Combination No. : 0 401 876 810  
Injection pump  
Pump designation : PE6P120A320RS3359  
EP type number : 0 411 826 815  
Governor  
Governor design. : RSV325...1200P1A615  
Governor no. : 0 421 833 503  
Cust. part No. : 3825515 P01 v. 5/95

Customer-spec. information  
Customer : PENTA  
Motor : TD 730ME  
Power KW : 150.0

## TEST BENCH REQUIREMENTS

Inlet line : 3.1  
Test oil inlet  
temp. °C : 40  
Tolerance °C : ± 2.0  
Overflow valve : 2 417 413 077  
Inlet press. bar : 1.5  
Tolerance bar : ± 0.1  
Test nozzle holde  
assembly : 1 688 901 101  
Opening pressure  
bar : 208.5  
Tolerance bar : ± 1.5  
Test lines : 1 680 750 008  
Outside diameter : 6.0

H01

x inside diameter : 2.0  
x length mm : 600

## REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

## BEGINNING OF DELIVERY

Test pressure bar : 26.0  
Tolerance bar : ± 1.0  
Prestroke mm : 3.35  
Tolerance mm : ± 0.05  
test only : ± 0.10  
Rack travel in mm : 9.00  
Tolerance mm : ± 0.50  
Firing order : 1- 5- 3- 6- 2-  
: 4  
Phasing : 0-60-120-180-240  
: -300  
Tolerance : ± 0.30  
Check  
tolerance °NW : ± 0.75  
Start of delivery mark  
Barrel no. : 1

## BASIC SETTING

Rated speed rpm : 1200  
Rack travel in mm : 11.10  
Tolerance mm : ± 0.05  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 130.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 1.0  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 4.0

---

Spread  
Tolerance  
cm<sup>3</sup>/1000 strokes : 7.0

---

Check tolerance  
cm<sup>3</sup>/1000S. : 11.0

Rated speed rpm : 325

Rack travel in mm : 4.40

Tolerance mm : ± 0.20

Del. quantity  
cm<sup>3</sup>/1000 strokes : 30.0

Tolerance  
cm<sup>3</sup>/1000 strokes : ± 2.5

Check tolerance  
cm<sup>3</sup>/1000S. : ± 5.0

Spread  
Tolerance  
cm<sup>3</sup>/1000 strokes : 3.0

Check tolerance  
cm<sup>3</sup>/1000S. : 6.0

#### (B) SETTING OF INJECTION PUMP WITH GOVERNOR

---

##### GUIDE SLEEVE POSITION

Rated speed rpm : 800

Rack travel in mm : 0.85

Tolerance mm : ± 0.55

governor spring  
pre-tension  
click setting x : 6.00

---

##### FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1200

Aneroid pressure  
hPa : 1500

Del. quantity  
cm<sup>3</sup>/1000 strokes : 130.0

Tolerance  
cm<sup>3</sup>/1000 strokes : ± 1.0

Check tolerance  
cm<sup>3</sup>/1000S. : ± 4.0

Spread  
Tolerance  
cm<sup>3</sup>/1000 strokes : 7.0

Check tolerance  
cm<sup>3</sup>/1000S. : 11.0

---

##### RATED SPEED

control lever  
position degree : 71.0  
tolerance degree : ± 4.0

control lever  
position degree : 118.0  
tolerance degree : ± 4.0

rack travel mm : 10.10  
Rated speed rpm : 1235  
Tolerance 1/min : ± 5

rack travel mm : 4.00  
Rated speed rpm : 1280  
Tolerance 1/min : ± 15

rack travel mm : 0.85  
Tolerance mm : ± 0.55  
Rated speed rpm : 1400

---

##### LOW IDLE

control lever  
position degree : 79.0  
tolerance degree : ± 4.0

control lever  
position degree : 31.0  
tolerance degree : ± 4.0

##### Setting point w/out bumper spring

Rated speed rpm : 325  
rack travel mm : 3.90

##### Testing:

Rated speed rpm : 325  
rack travel mm : 4.40  
Tolerance mm : ± 0.10

rack travel mm : 2.00  
Rated speed rpm : 390  
Tolerance 1/min : ± 30

---

##### TORQUE CONTROL

Rated speed rpm : 1200  
rack travel mm : 11.10  
Tolerance mm : ± 0.05

Rated speed rpm : 700

rack travel mm : 11.10  
Tolerance mm : + 0.10

---

ANEROID/ALTITUDE  
COMPENSATOR TEST

SETTING

Rated speed rpm : 500  
Pressure hPa : 1500  
rack travel mm : 11.00  
Tolerance mm : + 0.05

MEASUREMENT

Pressure hPa : -  
Rated speed rpm : 500  
rack travel mm : 8.80  
Tolerance mm : + 0.10

Rated speed rpm : 500

Pressure hPa : 770  
rack travel mm : 1.85  
Tolerance mm : + 0.15

Pressure hPa : 390  
rack travel mm : 0.25  
Tolerance mm : + 0.05

---

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure  
hPa : 1500  
Rated speed rpm : 700  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 150.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : + 3.0  
Check tolerance  
cm<sup>3</sup>/1000S. : + 6.0  
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 7.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 11.0

Aneroid pressure  
hPa : -  
Rated speed rpm : 500  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 89.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : + 1.0  
Check tolerance  
cm<sup>3</sup>/1000S. : + 4.0

H03

---

BREAKAWAY

Rack travel in mm : 10.10  
Rated speed rpm : 1235  
Tolerance 1/min : + 5

---

LOW IDLE

Rated speed rpm : 325  
rack travel mm : 4.40  
Tolerance mm : + 0.20  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 30.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : + 2.5  
Check tolerance  
cm<sup>3</sup>/1000S. : + 5.0  
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 3.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 6.0

---

End of test specification sheet

# BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 10.10.95  
Test oil : ISO 4113

Combination No. : 0 402 048 705

Injection pump  
Pump designation : PES8P120A320RS3199  
EP type number : 0 412 028 705

Governor  
Governor design. : RQV275...1050PA665  
Governor no. : 0 421 813 370

Cust. part No. :

## Customer-spec. information

Customer : RVI  
Motor : MIVR083530  
Power KW : 320.0

## TEST BENCH REQUIREMENTS

Inlet line : 3.2

Test oil inlet  
temp. °C : 40  
Tolerance °C : ± 2.0

Overflow valve : 1 417 413 025

Inlet press. bar : 1.5

Test nozzle holde  
assembly : 1 688 901 019

Opening pressure  
bar : 208.5  
Tolerance bar : ± 1.5

Test lines : 1 680 750 075

Outside diameter : 8.0

x inside diameter : 3.0  
x length mm : 1000

## REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

## BEGINNING OF DELIVERY

Test pressure bar : 26.0  
Tolerance bar : ± 1.0

Prestroke mm : 3.55  
Tolerance mm : ± 0.05

test only : ± 0.10

Rack travel in mm : 10.50  
Tolerance mm : ± 1.50

Firing order : 1- 8- 4- 2- 7  
                  : - 3- 6- 5

Phasing : 0-45-90-135-180  
          : -225-270-315

Tolerance : ± 0.30  
Check  
tolerance °NW : ± 0.50

Start of delivery mark

°NW after s.o.d. : 13.00

Barrel no. : 1

## BASIC SETTING

Rated speed rpm : 1050

Del. quantity  
cm<sup>3</sup>/1000 strokes : 203.0

Tolerance  
cm<sup>3</sup>/1000 strokes : ± 1.0

Check tolerance  
cm<sup>3</sup>/1000S. : ± 4.0

Speed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 5.0

Check tolerance  
cm<sup>3</sup>/1000S. : 9.0

Rated speed rpm : 275

Rack travel in mm : -7.50  
Tolerance mm : ± 0.10

Del. quantity  
cm<sup>3</sup>/1000 strokes : 20.0

Tolerance  
cm<sup>3</sup>/1000 strokes : ± 3.0

Check tolerance  
cm<sup>3</sup>/1000S. : ± 6.0

Speed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0

Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

(B) SETTING OF INJECTION PUMP  
WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 275  
guide sleeve  
travel mm : 0.89  
Tolerance mm : ± 0.20

Rated speed rpm : 1135  
guide sleeve  
travel mm : 8.32  
Tolerance mm : ± 0.15

Rated speed rpm : 781  
guide sleeve  
travel mm : 5.68  
Tolerance mm : ± 0.25

Rated speed rpm : 480  
guide sleeve  
travel mm : 3.60  
Tolerance mm : ± 0.25

Rated speed rpm : 1430  
guide sleeve  
travel mm : 11.50  
Tolerance mm : ± 0.50

GUIDE SLEEVE POSITION

Rated speed rpm : 1250

Rack travel in mm : 10.45  
Tolerance mm : ± 1.30

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1050

Aneroid pressure  
hPa : 700

Del. quantity  
cm<sup>3</sup>/1000 strokes : 203.0

Tolerance  
cm<sup>3</sup>/1000 strokes : ± 1.0

Check tolerance  
cm<sup>3</sup>/1000S. : ± 4.0

Speed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 5.0

Check tolerance  
cm<sup>3</sup>/1000S. : 9.0

RATED SPEED

control lever  
position degree : 65.0  
tolerance degree : ± 4.0

control lever  
position degree : 300.0  
tolerance degree : ± 4.0

rack travel mm : -1.00  
Rated speed rpm : 1120  
Tolerance 1/min : ± 5

rack travel mm : -7.45  
Rated speed rpm : 1225  
Tolerance 1/min : ± 15

rack travel mm : -10.95  
Tolerance mm : ± 0.50  
Rated speed rpm : 1350

LOW IDLE

control lever  
position degree : 245.0  
tolerance degree : ± 4.0

control lever  
position degree : 10.0  
tolerance degree : ± 4.0

Testing:

Rated speed rpm : 200  
CRT mm max. : < -5.80  
Rated speed rpm : 343

---

#### TORQUE CONTROL

Rated speed rpm : 1050  
Rated speed rpm : 650

---

#### ANEROID/ALTITUDE COMPENSATOR TEST

#### SETTING

Rated speed rpm : 500  
Pressure hPa : 700

#### MEASUREMENT

Pressure hPa : -  
Rated speed rpm : 500  
rack travel mm : -2.60  
Tolerance mm : + 0.10

Rated speed rpm : 500

Pressure hPa : 360  
rack travel mm : -1.90  
Tolerance mm : + 0.10

Pressure hPa : 420  
rack travel mm : -0.75  
Tolerance mm : + 0.05

---

#### START CUT-OUT

Rated speed rpm : < 195  
Check  
speed 1/min : < 215

---

#### FUEL DELIVERY CHARACTERISTICS

Aneroid pressure  
hPa : 700  
Rated speed rpm : 650  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 192.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : + 4.0  
Check tolerance  
cm<sup>3</sup>/1000S. : + 7.0

Aneroid pressure  
hPa : -  
Rated speed rpm : 500  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 111.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : + 1.0  
Check tolerance  
cm<sup>3</sup>/1000S. : + 4.0

---

#### BREAKAWAY

Rack travel in mm : -1.00  
Rated speed rpm : 1120  
Tolerance 1/min : + 5

---

#### STARTING FUEL DELIVERY

Rated speed rpm : 100  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 175.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : + 15.0  
Check tolerance  
cm<sup>3</sup>/1000S. : + 19.0

---

#### LOW IDLE

Rated speed rpm : 275  
rack travel mm : -7.50  
Tolerance mm : + 0.10  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 20.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : + 3.0  
Check tolerance  
cm<sup>3</sup>/1000S. : + 6.0  
Speed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

---

End of test specification sheet

# BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 09.10.95  
Test oil : ISO 4113

Combination No. : 0 402 646 644

Injection pump  
Pump designation : PE6P120A320RS7319  
EP type number : 0 412 626 914

Governor  
Governor design. : RQV300...1400PA1124  
Governor no. : 0 421 814 086

Cust. part No. : 866633 P03 5.10.95

Customer-spec. information  
Customer : PENTA  
Motor : TAMD 63  
Power kW : 265.0

## TEST BENCH REQUIREMENTS

Inlet line : 3.1

Test oil inlet  
temp. °C : 40  
Tolerance °C : ± 2.0

Overflow valve : 2 417 413 077

Inlet press. bar : 1.5  
Tolerance bar : ± 0.1

Test nozzle holde  
assembly : 1 688 901 105

Opening pressure  
bar : 208.5  
Tolerance bar : ± 1.5

Test lines : 1 680 750 089

Outside diameter : 8.0

H07

x inside diameter : 3.0  
x length mm : 600

## REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

## BEGINNING OF DELIVERY

Test pressure bar : 26.0  
Tolerance bar : ± 1.0

Prestroke mm : 3.65  
Tolerance mm : ± 0.05

test only : ± 0.10

Rack travel in mm : 10.50  
Tolerance mm : ± 1.50

Firing order : 1- 5- 3- 6- 2-  
: 4

Phasing : 0-60-120-180-240  
: -300

Tolerance : ± 0.30  
Check  
tolerance °NW : ± 0.75

Start of delivery mark

Barrel no. : 1

## BASIC SETTING

Rated speed rpm : 1000

Rack travel in mm : 12.90  
Tolerance mm : ± 0.05

Del. quantity  
cm<sup>3</sup>/1000 strokes : 241.0

Tolerance  
cm<sup>3</sup>/1000 strokes : ± 1.0

Check tolerance  
cm<sup>3</sup>/1000S. : + 4.0

Spread  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0

Check tolerance  
cm<sup>3</sup>/1000S. : 11.0

Del. quantity  
cm<sup>3</sup>/1000 strokes : 23.0

Tolerance  
cm<sup>3</sup>/1000 strokes : + 3.0

Check tolerance  
cm<sup>3</sup>/1000S. : + 5.0

Spread  
Tolerance  
cm<sup>3</sup>/1000 strokes : 5.0

Check tolerance  
cm<sup>3</sup>/1000S. : 8.0

#### (B) SETTING OF INJECTION PUMP WITH GOVERNOR

##### GUIDE SLEEVE TRAVEL

Rated speed rpm : 300  
guide sleeve  
travel mm : 1.24  
Tolerance mm : + 0.25

Rated speed rpm : 1456  
guide sleeve  
travel mm : 7.69  
Tolerance mm : + 0.25

Rated speed rpm : 1170  
guide sleeve  
travel mm : 5.67  
Tolerance mm : + 0.25

Rated speed rpm : 448  
guide sleeve  
travel mm : 2.83  
Tolerance mm : + 0.25

Rated speed rpm : 498  
guide sleeve  
travel mm : 3.20  
Tolerance mm : + 0.25

Rated speed rpm : 690  
guide sleeve  
travel mm : 3.68  
Tolerance mm : + 0.25

Rated speed rpm : 1638

guide sleeve  
travel mm : 10.00  
Tolerance mm : + 0.25

Rated speed rpm : 1760  
guide sleeve  
travel mm : 11.50  
Tolerance mm : + 0.50

##### GUIDE SLEEVE POSITION

Rated speed rpm : 1640

Rack travel in mm : 9.00  
Tolerance mm : + 3.00

##### FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1000  
Aneroid pressure  
hPa : 2000

Del. quantity  
cm<sup>3</sup>/1000 strokes : 241.0

Tolerance  
cm<sup>3</sup>/1000 strokes : + 1.0

Check tolerance  
cm<sup>3</sup>/1000S. : + 4.0

Spread  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0

Check tolerance  
cm<sup>3</sup>/1000S. : 11.0

##### RATED SPEED

control lever  
position degree : 54.0  
tolerance degree : + 4.0

control lever  
position degree : 118.0  
tolerance degree : + 4.0

rack travel mm : 12.30  
Rated speed rpm : 1440  
Tolerance 1/min : + 5

rack travel mm : 4.00  
Rated speed rpm : 1570  
Tolerance 1/min : + 15

rack travel mm : 0.50  
Tolerance mm : + 0.50  
Rated speed rpm : 1650



---

#### LOW IDLE

control lever  
position degree : 81.0  
tolerance degree :  $\pm$  4.0

control lever  
position degree : 17.0  
tolerance degree :  $\pm$  4.0

#### Testing:

Rated speed rpm : 300  
rack travel mm : 5.40  
Tolerance mm :  $\pm$  0.20

Rated speed rpm : 200

CRT mm min. :  $>$  6.80

Rated speed rpm : 350

---

#### TORQUE CONTROL

Rated speed rpm : 1000  
rack travel mm : 12.90  
Tolerance mm :  $\pm$  0.05

Rated speed rpm : 1400  
rack travel mm : 12.90  
Tolerance mm :  $\pm$  0.10

---

#### ANEROID/ALTITUDE COMPENSATOR TEST

#### SETTING

Rated speed rpm : 500  
Pressure hPa : 2000  
rack travel mm : 13.30  
Tolerance mm :  $\pm$  0.05

#### MEASUREMENT

Pressure hPa : -  
Rated speed rpm : 500  
rack travel mm : 8.20  
Tolerance mm :  $\pm$  0.10

Rated speed rpm : 500

Pressure hPa : 1400  
rack travel mm : 4.70  
Tolerance mm :  $\pm$  0.20

H09

Pressure hPa : 430  
rack travel mm : 0.25  
Tolerance mm :  $\pm$  0.05

---

#### FUEL DELIVERY CHARACTERISTICS

Aneroid pressure  
hPa : 2000  
Rated speed rpm : 1400  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 230.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  3.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  5.0  
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 10.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 14.0

Aneroid pressure  
hPa : -  
Rated speed rpm : 500  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 84.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  1.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  4.0

---

#### BREAKAWAY

Rack travel in mm : 12.30  
Rated speed rpm : 1440  
Tolerance 1/min :  $\pm$  5

---

#### LOW IDLE

Del. quantity  
cm<sup>3</sup>/1000 strokes : 23.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  3.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  5.0  
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 5.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 8.0

---

End of test specification sheet

# BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 10.10.95

Test oil : ISO 4113

Combination No. : 0 402 648 931B

Injection pump

Pump designation : PE8P120A320LS7847-3

EP type number : 0 412 628 886

Governor

Governer design. : RQ300/950PA1032-7

Governer no. : 0 421 801 715

Cust. part No. : 0230741302

## Customer-spec. information

Customer : MB-NFZ

Motor : OM402 LA

Power KW : 280.0

## TEST BENCH REQUIREMENTS

Inlet line : 3.1

Test oil inlet

temp. °C : 40

Tolerance °C : ± 2.0

Overflow valve : 1 417 413 025

Inlet press. bar : 1.5

Tolerance bar : ± 0.1

Overflow quantity

min. l/h : 110

Tolerance l/h : ± 10.0

Test nozzle holde  
assembly

: 1 688 901 105

Opening pressure

bar : 208.5

Tolerance bar : ± 1.5

Test lines : 1 680 750 075

Outside diameter : 8.0

x inside diameter : 3.0

x length mm : 1000

## REMARKS

### (A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values

### BEGINNING OF DELIVERY

Test pressure bar : 26.0

Tolerance bar : ± 1.0

Prestroke mm : 5.55

Tolerance mm : ± 0.05

test only : ± 0.10

Rack travel in mm : 20.50

Tolerance mm : ± 0.50

Firing order : 8- 7- 2- 6- 3

: - 5- 4- 1

Phasing : 0-45-90-135-180

: -225-270-315

Tolerance : ± 0.30

Check

tolerance °NW : ± 0.50

Start of delivery mark

Barrel no. : 8

### BASIC SETTING

Rated speed rpm : 550

Rack travel in mm : 14.80

Tolerance mm : ± 0.05

Del. quantity

cm<sup>3</sup>/1000 strokes : 239.0

Tolerance  
cm<sup>3</sup>/1000 strokes : +- 1.0

Check tolerance  
cm<sup>3</sup>/1000S. : +- 4.0

Speed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 6.0

Check tolerance  
cm<sup>3</sup>/1000S. : 9.0

Rated speed rpm : 300

Rack travel in mm : 5.70  
Tolerance mm : +- 0.30

Del. quantity  
cm<sup>3</sup>/1000 strokes : 13.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : +- 3.0  
Check tolerance  
cm<sup>3</sup>/1000S. : +- 6.0

Speed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 6.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 10.0

#### (B) SETTING OF INJECTION PUMP WITH GOVERNOR

##### GUIDE SLEEVE TRAVEL

Rated speed rpm : 300  
guide sleeve  
travel mm : 1.74  
Tolerance mm : +- 0.10

Rated speed rpm : 1005  
guide sleeve  
travel mm : 6.84  
Tolerance mm : +- 0.10

Rated speed rpm : 950  
guide sleeve  
travel mm : 6.50  
Tolerance mm : +- 0.10

Rated speed rpm : 736  
guide sleeve  
travel mm : 6.13  
Tolerance mm : +- 0.10

Rated speed rpm : 415  
guide sleeve  
travel mm : 3.82  
Tolerance mm : +- 0.10

Rated speed rpm : 550  
guide sleeve  
travel mm : 6.00  
Tolerance mm : +- 0.10

Rated speed rpm : 1160  
guide sleeve  
travel mm : 11.50  
Tolerance mm : +- 0.50

Rated speed rpm : 833  
guide sleeve  
travel mm : 6.38  
Tolerance mm : +- 0.10

##### GUIDE SLEEVE POSITION

Rated speed rpm : 600  
Rack travel in mm : 20.00  
Tolerance mm : +- 0.80

##### FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 550  
Aneroid pressure  
hPa : 1200  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 239.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : +- 1.0  
Check tolerance  
cm<sup>3</sup>/1000S. : +- 4.0  
Speed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 6.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 9.0

##### RATED SPEED

control lever  
position degree : 97.0  
tolerance degree : +- 4.0

rack travel mm : 13.15  
Rated speed rpm : 998  
Tolerance 1/min : +- 8

rack travel mm : 4.00  
Rated speed rpm : 1085  
Tolerance 1/min : +- 15

rack travel mm : 0.75  
Tolerance mm : +- 0.75

Rated speed rpm : 1350

---

#### LOW IDLE

control lever  
position degree : 73.0  
tolerance degree :  $\pm$  4.0

#### Testing:

Rated speed rpm : 300  
rack travel mm : 5.50  
Tolerance mm :  $\pm$  0.10

rack travel mm : 2.00  
Rated speed rpm : 420  
Tolerance 1/min :  $\pm$  20

Rated speed rpm : 200  
CRT mm min. :  $>$  7.50

---

#### TORQUE CONTROL

Rated speed rpm : 550  
rack travel mm : 14.80  
Tolerance mm :  $\pm$  0.05

Rated speed rpm : 950  
rack travel mm : 14.15  
Tolerance mm :  $\pm$  0.10

Rated speed rpm : 860  
rack travel mm : 14.35  
Tolerance mm :  $\pm$  0.10

Rated speed rpm : 820  
rack travel mm : 14.65  
Tolerance mm :  $\pm$  0.10

---

#### ANEROID/ALTITUDE COMPENSATOR TEST

#### SETTING

Rated speed rpm : 400  
Pressure hPa : 1200  
rack travel mm : 14.80  
Tolerance mm :  $\pm$  0.05

#### MEASUREMENT

Pressure hPa : -  
Rated speed rpm : 400  
rack travel mm : 10.60

H13

Tolerance mm :  $\pm$  0.20

Rated speed rpm : 400

Pressure hPa : 300  
rack travel mm : 11.90  
Tolerance mm :  $\pm$  0.15

Pressure hPa : 450  
rack travel mm : 12.90  
Tolerance mm :  $\pm$  0.10

---

#### FUEL DELIVERY CHARACTERISTICS

Aneroid pressure  
hPa : 1200  
Rated speed rpm : 950  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 216.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  2.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  5.0  
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

Aneroid pressure  
hPa : -  
Rated speed rpm : 400  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 107.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  1.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  4.0  
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

---

#### BREAKAWAY

Rack travel in mm : 13.15  
Rated speed rpm : 998  
Tolerance 1/min :  $\pm$  8

---

#### STARTING FUEL DELIVERY

Rated speed rpm : 100  
rack travel mm : 10.60

Tolerance mm :  $\pm$  0.50  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 60.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  10.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  14.0

---

LOW IDLE

Rated speed rpm : 300  
rack travel mm : 5.70  
Tolerance mm :  $\pm$  0.30  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 13.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  3.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  6.0  
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 6.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 10.0

---

End of test specification sheet

# BOSCH INJ. PUMP TEST SPECIFICATIONS

## Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 10.10.95  
Test oil : ISO 4113

Combination No. : 0 402 648 931c

Injection pump  
Pump designation : PE8P120A320LS7847-2  
EP type number : 0 412 628 885

Governor  
Governor design. : RQ300/950PA1032-7  
Governor no. : 0 421 801 715

Cust. part No. : 0230741302

Customer-spec. information  
Customer : MB-NFZ  
Motor : OM402 LA  
Power KW : 280.0

## TEST BENCH REQUIREMENTS

Inlet line : 3.1

Test oil inlet  
temp. °C : 40  
Tolerance °C : ± 2.0

Overflow valve : 1 417 413 025

Inlet press. bar : 1.5  
Tolerance bar : ± 0.1

Overflow quantity  
min. l/h : 110  
Tolerance l/h : ± 10.0

Test nozzle holder  
assembly : 1 688 901 105

Opening pressure  
bar : 208.5  
Tolerance bar : ± 1.5

Test lines : 1 680 750 075

Outside diameter : 8.0

x inside diameter : 3.0  
x length mm : 1000

## REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

## BEGINNING OF DELIVERY

Test pressure bar : 26.0  
Tolerance bar : ± 1.0

Prestroke mm : 5.55  
Tolerance mm : ± 0.05

test only : ± 0.10

Rack travel in mm : 20.50  
Tolerance mm : ± 0.50

Firing order : 8- 7- 2- 6- 3  
                  : - 5- 4- 1

Phasing : 0-45-90-135-180  
          : -225-270-315  
Tolerance : ± 0.30  
Check  
tolerance °NW : ± 0.50

Start of delivery mark

Barrel no. : 8

## BASIC SETTING

Rated speed rpm : 550

Rack travel in mm : 14.80  
Tolerance mm : ± 0.05

Del. quantity  
cm<sup>3</sup>/1000 strokes : 239.0

Tolerance  
cm<sup>3</sup>/1000 strokes : + 1.0

Check tolerance  
cm<sup>3</sup>/1000S. : + 4.0

Speed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 6.0

Check tolerance  
cm<sup>3</sup>/1000S. : 9.0

Rated speed rpm : 300

Rack travel in mm : 5.70  
Tolerance mm : + 0.30

Del. quantity  
cm<sup>3</sup>/1000 strokes : 13.0

Tolerance  
cm<sup>3</sup>/1000 strokes : + 3.0

Check tolerance  
cm<sup>3</sup>/1000S. : + 6.0

Speed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 6.0

Check tolerance  
cm<sup>3</sup>/1000S. : 10.0

#### (B) SETTING OF INJECTION PUMP WITH GOVERNOR

##### GUIDE SLEEVE TRAVEL

Rated speed rpm : 300  
guide sleeve  
travel mm : 1.74  
Tolerance mm : + 0.10

Rated speed rpm : 1005  
guide sleeve  
travel mm : 6.84  
Tolerance mm : + 0.10

Rated speed rpm : 950  
guide sleeve  
travel mm : 6.50  
Tolerance mm : + 0.10

Rated speed rpm : 736  
guide sleeve  
travel mm : 6.13  
Tolerance mm : + 0.10

Rated speed rpm : 415  
guide sleeve  
travel mm : 3.82  
Tolerance mm : + 0.10

Rated speed rpm : 550  
guide sleeve  
travel mm : 6.00  
Tolerance mm : + 0.10

Rated speed rpm : 1160  
guide sleeve  
travel mm : 11.50  
Tolerance mm : + 0.50

Rated speed rpm : 833  
guide sleeve  
travel mm : 6.38  
Tolerance mm : + 0.10

##### GUIDE SLEEVE POSITION

Rated speed rpm : 600

Rack travel in mm : 20.00  
Tolerance mm : + 0.80

##### FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 550  
Aneroid pressure  
hPa : 1200

Del. quantity  
cm<sup>3</sup>/1000 strokes : 239.0

Tolerance  
cm<sup>3</sup>/1000 strokes : + 1.0

Check tolerance  
cm<sup>3</sup>/1000S. : + 4.0

Speed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 6.0

Check tolerance  
cm<sup>3</sup>/1000S. : 9.0

##### RATED SPEED

control lever  
position degree : 97.0  
tolerance degree : + 4.0

rack travel mm : 13.15  
Rated speed rpm : 998  
Tolerance 1/min : + 8

rack travel mm : 4.00  
Rated speed rpm : 1085  
Tolerance 1/min : + 15

rack travel mm : 0.75  
Tolerance mm : + 0.75



Rated speed rpm : 1350

---

#### LOW IDLE

control lever  
position degree : 73.0  
tolerance degree :  $\pm$  4.0

#### Testing:

Rated speed rpm : 300  
rack travel mm : 5.50  
Tolerance mm :  $\pm$  0.10

rack travel mm : 2.00  
Rated speed rpm : 420  
Tolerance 1/min :  $\pm$  20

Rated speed rpm : 200  
CRT mm min. :  $>$  7.50

---

#### TORQUE CONTROL

Rated speed rpm : 550  
rack travel mm : 14.80  
Tolerance mm :  $\pm$  0.05

Rated speed rpm : 950  
rack travel mm : 14.15  
Tolerance mm :  $\pm$  0.10

Rated speed rpm : 860  
rack travel mm : 14.35  
Tolerance mm :  $\pm$  0.10

Rated speed rpm : 820  
rack travel mm : 14.65  
Tolerance mm :  $\pm$  0.10

---

#### ANEROID/ALTITUDE COMPENSATOR TEST

#### SETTING

Rated speed rpm : 400  
Pressure hPa : 1200  
rack travel mm : 14.80  
Tolerance mm :  $\pm$  0.05

#### MEASUREMENT

Pressure hPa : -  
Rated speed rpm : 400  
rack travel mm : 10.60

H17

Tolerance mm :  $\pm$  0.20

Rated speed rpm : 400

Pressure hPa : 300  
rack travel mm : 11.90  
Tolerance mm :  $\pm$  0.15

Pressure hPa : 450  
rack travel mm : 12.90  
Tolerance mm :  $\pm$  0.10

---

#### FUEL DELIVERY CHARACTERISTICS

Aneroid pressure  
hPa : 1200  
Rated speed rpm : 950  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 216.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  2.0  
Check tolerance  
cm<sup>3</sup>/1000s. :  $\pm$  5.0  
Speed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0  
Check tolerance  
cm<sup>3</sup>/1000s. : 12.0

Aneroid pressure  
hPa : -  
Rated speed rpm : 400  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 107.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  1.0  
Check tolerance  
cm<sup>3</sup>/1000s. :  $\pm$  4.0  
Speed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0  
Check tolerance  
cm<sup>3</sup>/1000s. : 12.0

---

#### BREAKAWAY

Rack travel in mm : 13.15  
Rated speed rpm : 998  
Tolerance 1/min :  $\pm$  8

---

#### STARTING FUEL DELIVERY

Rated speed rpm : 100  
rack travel mm : 10.60

Tolerance mm : +- 0.50  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 60.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : +- 10.0  
Check tolerance  
cm<sup>3</sup>/1000S. : +- 14.0

---

LOW IDLE

Rated speed rpm : 300  
rack travel mm : 5.70  
Tolerance mm : +- 0.30  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 13.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : +- 3.0  
Check tolerance  
cm<sup>3</sup>/1000S. : +- 6.0  
Speed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 6.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 10.0

---

End of test specification sheet

# BOSCH INJ. PUMP TEST SPECIFICATIONS

## Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 10.10.95  
Test oil : ISO 4113  
  
Combination No. : 0 402 648 933  
  
Injection pump  
Pump designation : PE8P120A320LS7847-3  
EP type number : 0 412 628 886  
  
Governor  
Governor design. : RQ300/950PA1031-14  
Governor no. : 0 421 801 720

Cust. part No. : 0230742702

Customer-spec. information  
Customer : MB-NFZ  
Motor : OM402 LA  
Power KW : 280.0

## TEST BENCH REQUIREMENTS

Inlet line : 3.1

Test oil inlet  
temp. °C : 40  
Tolerance °C : ± 2.0

Overflow valve : 1 417 413 025

Inlet press. bar : 1.5  
Tolerance bar : ± 0.1

Tolerance L/h : ± 10.0

Test nozzle holde  
assembly : 1 688 901 105

Opening pressure  
bar : 208.5  
Tolerance bar : ± 1.5

Test lines : 1 680 750 075

Outside diameter : 8.0  
x inside diameter : 3.0  
x length mm : 1000

## REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

## BEGINNING OF DELIVERY

Test pressure bar : 26.0  
Tolerance bar : ± 1.0

Prestroke mm : 5.55  
Tolerance mm : ± 0.05

test only : ± 0.10

Rack travel in mm : 20.50  
Tolerance mm : ± 0.50

Firing order : 8- 7- 2- 6- 3  
: - 5- 4- 1

Phasing : 0-45-90-135-180  
: -225-270-315  
Tolerance : ± 0.30  
Check  
tolerance °NW : ± 0.50

Start of delivery mark

Barrel no. : 8

## BASIC SETTING

Rated speed rpm : 550

Rack travel in mm : 14.80  
Tolerance mm : ± 0.05

Del. quantity  
cm<sup>3</sup>/1000 strokes : 239.0

Tolerance  
cm<sup>3</sup>/1000 strokes : ± 1.0

Check tolerance  
cm<sup>3</sup>/1000S. : + 4.0

---

Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 6.0

---

Check tolerance  
cm<sup>3</sup>/1000S. : 9.0

Rated speed rpm : 300

Rack travel in mm : 5.70  
Tolerance mm : + 0.30

Del. quantity  
cm<sup>3</sup>/1000 strokes : 13.0

Tolerance  
cm<sup>3</sup>/1000 strokes : + 3.0

Check tolerance  
cm<sup>3</sup>/1000S. : + 6.0

Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 6.0

Check tolerance  
cm<sup>3</sup>/1000S. : 10.0

#### (B) SETTING OF INJECTION PUMP WITH GOVERNOR

---

##### GUIDE SLEEVE TRAVEL

Rated speed rpm : 300  
guide sleeve  
travel mm : 1.62  
Tolerance mm : + 0.10

Rated speed rpm : 1009  
guide sleeve  
travel mm : 6.84  
Tolerance mm : + 0.10

Rated speed rpm : 950  
guide sleeve  
travel mm : 6.50  
Tolerance mm : + 0.10

Rated speed rpm : 739  
guide sleeve  
travel mm : 6.13  
Tolerance mm : + 0.10

Rated speed rpm : 443  
guide sleeve  
travel mm : 4.35  
Tolerance mm : + 0.10

Rated speed rpm : 550

guide sleeve  
travel mm : 6.00  
Tolerance mm : + 0.10

Rated speed rpm : 1160  
guide sleeve  
travel mm : 11.50  
Tolerance mm : + 0.50

Rated speed rpm : 835  
guide sleeve  
travel mm : 6.38  
Tolerance mm : + 0.10

---

##### GUIDE SLEEVE POSITION

Rated speed rpm : 600

Rack travel in mm : 20.00  
Tolerance mm : + 0.80

---

##### FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 550  
Aneroid pressure  
hPa : 1200  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 239.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : + 1.0  
Check tolerance  
cm<sup>3</sup>/1000S. : + 4.0  
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 6.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 9.0

---

##### RATED SPEED

control lever  
position degree : 97.0  
tolerance degree : + 4.0

rack travel mm : 13.15  
Rated speed rpm : 998  
Tolerance 1/min : + 8

rack travel mm : 4.00  
Rated speed rpm : 1085  
Tolerance 1/min : + 15

rack travel mm : 0.75  
Tolerance mm : + 0.75  
Rated speed rpm : 1350

---

## LOW IDLE

control lever  
position degree : 70.0  
tolerance degree :  $\pm$  4.0

### Testing:

Rated speed rpm : 300  
rack travel mm : 3.50  
Tolerance mm :  $\pm$  0.10

rack travel mm : 2.00  
Rated speed rpm : 350  
Tolerance 1/min :  $\pm$  20

Rated speed rpm : 200

CRT mm min. :  $>$  5.50

---

## TORQUE CONTROL

Rated speed rpm : 550  
rack travel mm : 14.80  
Tolerance mm :  $\pm$  0.05

Rated speed rpm : 950  
rack travel mm : 14.15  
Tolerance mm :  $\pm$  0.10

Rated speed rpm : 860  
rack travel mm : 14.35  
Tolerance mm :  $\pm$  0.10

Rated speed rpm : 820  
rack travel mm : 14.65  
Tolerance mm :  $\pm$  0.10

---

## ANEROID/ALTITUDE COMPENSATOR TEST

### SETTING

Rated speed rpm : 400  
Pressure hPa : 1200  
rack travel mm : 14.80  
Tolerance mm :  $\pm$  0.05

### MEASUREMENT

Pressure hPa : -  
Rated speed rpm : 400  
rack travel mm : 10.60  
Tolerance mm :  $\pm$  0.20

Rated speed rpm : 400  
Pressure hPa : 300  
rack travel mm : 11.90  
Tolerance mm :  $\pm$  0.15

Pressure hPa : 450  
rack travel mm : 12.90  
Tolerance mm :  $\pm$  0.10

---

## START CUT-OUT

Rated speed rpm :  $<$  220  
Check  
speed 1/min :  $<$  240

---

## FUEL DELIVERY CHARACTERISTICS

Aneroid pressure  
hPa : 1200  
Rated speed rpm : 950  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 216.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  2.0  
Check tolerance  
cm<sup>3</sup>/1000s. :  $\pm$  5.0

Speed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0  
Check tolerance  
cm<sup>3</sup>/1000s. : 12.0

Aneroid pressure  
hPa : -  
Rated speed rpm : 400  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 107.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  1.0  
Check tolerance  
cm<sup>3</sup>/1000s. :  $\pm$  4.0  
Speed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0  
Check tolerance  
cm<sup>3</sup>/1000s. : 12.0

---

## BREAKAWAY

Rack travel in mm : 13.15  
Rated speed rpm : 998  
Tolerance 1/min :  $\pm$  8

---

#### STARTING FUEL DELIVERY

Rated speed rpm : 100  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 210.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  15.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  19.0

---

#### LOW IDLE

Rated speed rpm : 300  
rack travel mm : 5.70  
Tolerance mm :  $\pm$  0.30  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 13.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  3.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  6.0  
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 6.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 10.0

---

End of test specification sheet

# BOSCH INJ. PUMP TEST SPECIFICATIONS

## Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 09.10.95

Test oil : ISO 4113

Combination No. : 0 402 744 801

## Injection pump

Pump designation : PES4P120A320RS7380

EP type number : 0 412 724 802

## Governor

Governer design. : RQV275...1200PA1232K

Governer no. : 0 421 815 469

Cust. part No. : CCEP 5149 66-237

## Customer-spec. information

Customer : RVI

Motor : MIDR 04-02-26 B4

Power KW : 110.0

## TEST BENCH REQUIREMENTS

Inlet line : 3.2

## Test oil inlet

temp. °C : 40

Tolerance °C : ± 2.0

Overflow valve : 2 417 413 071

Inlet press. bar : 2.5

## Overflow quantity

min. l/h : 95

Tolerance l/h : ± 10.0

## Test nozzle holde assembly

: 1 688 901 105

## Opening pressure bar

: 208.5

Tolerance bar : ± 1.5

Test Lines : 1 680 750 089

Outside diameter : 8.0

x inside diameter : 3.0

x length mm : 600

## REMARKS

## (A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values \_\_\_\_\_

## BEGINNING OF DELIVERY

Test pressure bar : 26.0

Tolerance bar : ± 1.0

Prestroke mm : 5.00

Tolerance mm : ± 0.05

test only : ± 0.10

Rack travel in mm : 11.00

Tolerance mm : ± 0.50

Firing order : 1- 3- 4- 2

Phasing : 0-90-180-270

Tolerance : ± 0.30

Check

tolerance °NW : ± 0.50

## Start of delivery mark

Barrel no. : 1

## BASIC SETTING

Rated speed rpm : 1200

Del. quantity  
cm<sup>3</sup>/1000 strokes : 236.0

Tolerance  
cm<sup>3</sup>/1000 strokes : ± 1.0

Check tolerance  
cm<sup>3</sup>/1000S. : ± 4.0

## Speed

Tolerance  
cm<sup>3</sup>/1000 strokes : 5.0

Check tolerance  
cm<sup>3</sup>/1000S. : 9.0

Rated speed rpm : 325

Rack travel in mm : -6.10  
Tolerance mm : ± 0.20

Del. quantity  
cm<sup>3</sup>/1000 strokes : 40.0

Tolerance  
cm<sup>3</sup>/1000 strokes : ± 2.0

Check tolerance  
cm<sup>3</sup>/1000S. : ± 6.0

Spread  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0

Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

#### (B) SETTING OF INJECTION PUMP WITH GOVERNOR

##### GUIDE SLEEVE TRAVEL

Rated speed rpm : 325  
guide sleeve  
travel mm : 1.57  
Tolerance mm : ± 0.25

Rated speed rpm : 1381  
guide sleeve  
travel mm : 10.37  
Tolerance mm : ± 0.25

Rated speed rpm : 940  
guide sleeve  
travel mm : 6.87  
Tolerance mm : ± 0.25

Rated speed rpm : 390  
guide sleeve  
travel mm : 2.39  
Tolerance mm : ± 0.25

Rated speed rpm : 440  
guide sleeve  
travel mm : 2.90  
Tolerance mm : ± 0.25

Rated speed rpm : 560  
guide sleeve  
travel mm : 4.01  
Tolerance mm : ± 0.25

Rated speed rpm : 1650

guide sleeve  
travel mm : 13.50  
Tolerance mm : ± 0.50

##### GUIDE SLEEVE POSITION

Rated speed rpm : 1500

Rack travel in mm : 11.10  
Tolerance mm : ± 1.50

##### FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1200  
Aneroid pressure

hPa : 1200

Del. quantity  
cm<sup>3</sup>/1000 strokes : 236.0

Tolerance  
cm<sup>3</sup>/1000 strokes : ± 1.0

Check tolerance  
cm<sup>3</sup>/1000S. : ± 4.0

Spread  
Tolerance  
cm<sup>3</sup>/1000 strokes : 5.0

Check tolerance  
cm<sup>3</sup>/1000S. : 9.0

##### RATED SPEED

control lever  
position degree : 302.0  
tolerance degree : ± 4.0

rack travel mm : -1.00  
Rated speed rpm : 1270  
Tolerance 1/min : ± 5

rack travel mm : -8.20  
Rated speed rpm : 1465  
Tolerance 1/min : ± 15

rack travel mm : -11.70  
Tolerance mm : ± 0.50  
Rated speed rpm : 1550

##### LOW IDLE

control lever  
position degree : 253.0  
tolerance degree : ± 4.0

Testing:



Rated speed rpm : 325  
rack travel mm : -6.10  
Tolerance mm : +- 0.10

Rated speed rpm : 200  
CRT mm min. : < -4.60  
Rated speed rpm : 390

---

#### TORQUE CONTROL

Rated speed rpm : 1200  
Rated speed rpm : 700  
rack travel mm : -1.15  
Tolerance mm : +- 0.10  
Rated speed rpm : 350  
rack travel mm : -2.90  
Tolerance mm : +- 0.20

---

#### ANEROID/ALTITUDE COMPENSATOR TEST

#### SETTING

Rated speed rpm : 1200  
Pressure hPa : 1200

#### MEASUREMENT

Pressure hPa : -  
Rated speed rpm : 500  
rack travel mm : -4.20  
Tolerance mm : +- 0.20

Rated speed rpm : 1200

Pressure hPa : 320  
rack travel mm : -3.60  
Tolerance mm : +- 0.20

Pressure hPa : 520  
rack travel mm : -2.50  
Tolerance mm : +- 0.05

---

#### START CUT-OUT

Rated speed rpm : < 275  
Check  
speed 1/min : < 285

---

#### FUEL DELIVERY CHARACTERISTICS

Aneroid pressure  
hPa : 1200  
Rated speed rpm : 700  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 237.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : +- 3.0  
Check tolerance  
cm<sup>3</sup>/1000S. : +- 6.0

Aneroid pressure  
hPa : -  
Rated speed rpm : 500  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 155.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : +- 1.0  
Check tolerance  
cm<sup>3</sup>/1000S. : +- 4.0

---

#### BREAKAWAY

Rack travel in mm : -1.00  
Rated speed rpm : 1270  
Tolerance 1/min : +- 5

---

#### STARTING FUEL DELIVERY

Rated speed rpm : 100  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 100.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : +- 15.0  
Check tolerance  
cm<sup>3</sup>/1000S. : +- 19.0

---

#### LOW IDLE

Rated speed rpm : 325  
rack travel mm : -6.10  
Tolerance mm : +- 0.20  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 40.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : +- 2.0  
Check tolerance  
cm<sup>3</sup>/1000S. : +- 6.0  
Speed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

---

End of test specification sheet

# BOSCH INJ. PUMP TEST SPECIFICATIONS

## Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 05.10.95

Test oil : ISO 4113

Combination No. : 0 402 746 994

## Injection pump

Pump designation : PES6P120A320RS7344

EP type number : 0 412 726 914

## Governor

Governor design. : RQV275...1000PA1161

Governor no. : 0 421 814 100

Cust. part No. : CCEP 5143A 66-231

## Customer-spec. information

Customer : RVI

Motor : MIDR 062045 E/41

Power kW : 249.0

## TEST BENCH REQUIREMENTS

Inlet line : 3.1

Test oil inlet

temp. °C : 40

Tolerance °C : ± 2.0

Overflow valve : 2 417 413 071

Inlet press. bar : 2.5

Test nozzle holder  
assembly

: 1 688 901 105

Opening pressure  
bar

: 208.5

Tolerance bar : ± 1.5

Test lines : 1 680 750 089

Outside diameter : 8.0

x inside diameter : 3.0

x length mm : 600

## REMARKS

## (A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values \_\_\_\_\_

## BEGINNING OF DELIVERY

Test pressure bar : 26.0

Tolerance bar : ± 1.0

Prestroke mm : 4.50

Tolerance mm : ± 0.05

test only : ± 0.10

Rack travel in mm : 11.00

Tolerance mm : ± 1.50

Firing order : 1- 5- 3- 6- 2-  
: 4

Phasing : 0-60-120-180-240

: -300

Tolerance : ± 0.30

Check

tolerance °NW : ± 0.50

Start of delivery mark

Barrel no. : 1

## BASIC SETTING

Rated speed rpm : 600

Del. quantity

cm<sup>3</sup>/1000 strokes : 282.0

Tolerance

cm<sup>3</sup>/1000 strokes : ± 1.0

Check tolerance

cm<sup>3</sup>/1000S. : ± 4.0

Speed

Tolerance

cm<sup>3</sup>/1000 strokes : 5.0

---

Check tolerance  
 cm3/1000S. : 9.0  
 Rated speed rpm : 300  
 Rack travel in mm : -7.50  
 Tolerance mm :  $\pm$  0.20  
 Del. quantity  
 cm3/1000 strokes : 32.0  
 Tolerance  
 cm3/1000 strokes :  $\pm$  2.0  
 Check tolerance  
 cm3/1000S. :  $\pm$  5.0  
 Spread  
 Tolerance  
 cm3/1000 strokes : 8.0  
 Check tolerance  
 cm3/1000S. : 12.0

(B) SETTING OF INJECTION PUMP  
WITH GOVERNOR

---

GUIDE SLEEVE TRAVEL

Rated speed rpm : 300  
 guide sleeve  
 travel mm : 1.66  
 Tolerance mm :  $\pm$  0.25

Rated speed rpm : 1086  
 guide sleeve  
 travel mm : 8.09  
 Tolerance mm :  $\pm$  0.25

Rated speed rpm : 793  
 guide sleeve  
 travel mm : 6.00  
 Tolerance mm :  $\pm$  0.25

Rated speed rpm : 343  
 guide sleeve  
 travel mm : 2.33  
 Tolerance mm :  $\pm$  0.25

Rated speed rpm : 393  
 guide sleeve  
 travel mm : 2.95  
 Tolerance mm :  $\pm$  0.25

Rated speed rpm : 500  
 guide sleeve  
 travel mm : 3.72  
 Tolerance mm :  $\pm$  0.25

Rated speed rpm : 1410  
 guide sleeve  
 travel mm : 11.50

Tolerance mm :  $\pm$  0.50

---

GUIDE SLEEVE POSITION

Rated speed rpm : 1235  
 Rack travel in mm : 11.70  
 Tolerance mm :  $\pm$  1.30

---

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 600  
 Aneroid pressure  
 hPa : 1000  
 Del. quantity  
 cm3/1000 strokes : 282.0  
 Tolerance  
 cm3/1000 strokes :  $\pm$  1.0  
 Check tolerance  
 cm3/1000S. :  $\pm$  4.0  
 Spread  
 Tolerance  
 cm3/1000 strokes : 5.0  
 Check tolerance  
 cm3/1000S. : 9.0

---

RATED SPEED

control lever  
 position degree : 120.0  
 tolerance degree :  $\pm$  4.0

rack travel mm : -1.00  
 Rated speed rpm : 1080  
 Tolerance 1/min :  $\pm$  5

rack travel mm : -8.60  
 Rated speed rpm : 1215  
 Tolerance 1/min :  $\pm$  15

rack travel mm : -12.10  
 Tolerance mm :  $\pm$  0.50  
 Rated speed rpm : 1300

---

LOW IDLE

control lever  
 position degree : 65.0  
 tolerance degree :  $\pm$  4.0

Testing:

Rated speed rpm : 200

CRT mm max. : < -5.50

Rated speed rpm : 400

---

#### TORQUE CONTROL

Rated speed rpm : 600

Rated speed rpm : 1000  
Tolerance mm :  $\pm$  0.10

---

#### ANEROID/ALTITUDE COMPENSATOR TEST

#### SETTING

Rated speed rpm : 500  
Pressure hPa : 1000

#### MEASUREMENT

Pressure hPa : -  
Rated speed rpm : 500  
rack travel mm : -3.40  
Tolerance mm :  $\pm$  0.30

Rated speed rpm : 500

Pressure hPa : 320  
rack travel mm : -2.65  
Tolerance mm :  $\pm$  0.15

Pressure hPa : 640  
rack travel mm : -0.70  
Tolerance mm :  $\pm$  0.05

---

#### START CUT-OUT

Rated speed rpm : < 225  
Check  
speed 1/min : < 245

---

#### FUEL DELIVERY CHARACTERISTICS

Aneroid pressure  
hPa : 1000  
Rated speed rpm : 1000  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 283.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  3.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  6.0

Aneroid pressure  
hPa : -  
Rated speed rpm : 500  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 122.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  1.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  4.0

---

#### BREAKAWAY

Rack travel in mm : -1.00  
Rated speed rpm : 1080  
Tolerance 1/min :  $\pm$  5

---

#### STARTING FUEL DELIVERY

Rated speed rpm : 100  
rack travel mm : 20.25  
Tolerance mm :  $\pm$  0.75  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 150.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  15.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  19.0

---

#### LOW IDLE

Rated speed rpm : 300  
rack travel mm : -7.50  
Tolerance mm :  $\pm$  0.20  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 32.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  2.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  5.0  
Speed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

---

End of test specification sheet

# BOSCH INJ. PUMP TEST SPECIFICATIONS

## Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 05.10.95  
Test oil : ISO 4113

Combination No. : 0 402 946 018

Injection pump  
Pump designation : PE6P120A72ORS8041  
EP type number : 0 412 926 027

Governor  
Governor design. : RQV250...950PA1253  
Governor no. : 0 421 814 166

Cust. part No. : 1383215

Customer-spec. information  
Customer : SCANIA  
Motor : DSC 11.75

## TEST BENCH REQUIREMENTS

Inlet line : EHAB

Test oil inlet  
temp. °C : 40  
Tolerance °C : ± 2.0

Overflow valve : 2 417 413 082

Inlet press. bar : 2.5  
Tolerance bar : ± 0.1

Test nozzle holder  
assembly : 1 688 901 104

Opening pressure  
bar : 251.5  
Tolerance bar : ± 1.5

Test lines : 1 680 750 008

Outside diameter : 6.0

x inside diameter : 2.0  
x length mm : 600

## REMARKS

Start-of-delivery setting with ROBO diaphragm.

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

## BEGINNING OF DELIVERY

Test pressure bar : 26.0  
Tolerance bar : ± 1.0

Prestroke mm : 4.40  
Tolerance mm : ± 0.05

test only : ± 0.10

Rack travel in mm : 20.50  
Tolerance mm : ± 0.50

Firing order : 1- 5- 3- 6- 2-  
: 4

Phasing : 0-60-120-180-240  
: -300  
Tolerance : ± 0.30  
Check  
tolerance \*NW : ± 0.50

Start of delivery blocking

Barrel no. : 1

## BASIC SETTING

Rated speed rpm : 700

Rack travel in mm : 11.20  
Tolerance mm : ± 0.05

Del. quantity  
cm<sup>3</sup>/1000 strokes : 261.0

Tolerance  
cm<sup>3</sup>/1000 strokes : ± 1.0

---

Check tolerance  
cm<sup>3</sup>/1000S. : ± 4.0

---

Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0

---

Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

---

Rated speed rpm : 250

Rack travel in mm : 5.60  
Tolerance mm : ± 0.30

Del. quantity  
cm<sup>3</sup>/1000 strokes : 16.0

Tolerance  
cm<sup>3</sup>/1000 strokes : ± 3.0

Check tolerance  
cm<sup>3</sup>/1000S. : ± 6.0

Spreed  
Tolerance

cm<sup>3</sup>/1000 strokes : 4.0

Check tolerance  
cm<sup>3</sup>/1000S. : 8.0

#### (B) SETTING OF INJECTION PUMP WITH GOVERNOR

---

##### GUIDE SLEEVE TRAVEL

Rated speed rpm : 250  
guide sleeve  
travel mm : 1.31  
Tolerance mm : ± 0.20

Rated speed rpm : 1006  
guide sleeve  
travel mm : 7.25  
Tolerance mm : ± 0.15

Rated speed rpm : 673  
guide sleeve  
travel mm : 4.96  
Tolerance mm : ± 0.25

Rated speed rpm : 420  
guide sleeve  
travel mm : 3.37  
Tolerance mm : ± 0.25

Rated speed rpm : 1390  
guide sleeve  
travel mm : 11.50  
Tolerance mm : ± 0.50

---

##### GUIDE SLEEVE POSITION

Rated speed rpm : 1235

Rack travel in mm : 10.20  
Tolerance mm : ± 1.30

---

##### FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 700

Aneroid pressure  
hPa : 1500

Del. quantity  
cm<sup>3</sup>/1000 strokes : 261.0

Tolerance  
cm<sup>3</sup>/1000 strokes : ± 1.0

Check tolerance  
cm<sup>3</sup>/1000S. : ± 4.0

Spreed  
Tolerance

cm<sup>3</sup>/1000 strokes : 8.0

Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

---

##### RATED SPEED

control lever  
position degree : 59.0  
tolerance degree : ± 4.0

control lever  
position degree : 112.0  
tolerance degree : ± 4.0

rack travel mm : 10.90  
Rated speed rpm : 995  
Tolerance 1/min : ± 5

rack travel mm : 4.00  
Rated speed rpm : 1130  
Tolerance 1/min : ± 15

rack travel mm : 0.50  
Tolerance mm : ± 0.50  
Rated speed rpm : 1200

---

##### LOW IDLE

control lever  
position degree : 66.0  
tolerance degree : ± 4.0

control lever  
position degree : 12.0  
tolerance degree :  $\pm$  4.0

#### Testing:

Rated speed rpm : 250  
rack travel mm : 5.60  
Tolerance mm :  $\pm$  0.10

Rated speed rpm : 150  
CRT mm min. :  $>$  6.15

Rated speed rpm : 300

---

#### TORQUE CONTROL

Rated speed rpm : 700  
rack travel mm : 11.20  
Tolerance mm :  $\pm$  0.05

Rated speed rpm : 950  
rack travel mm : 11.20  
Tolerance mm :  $\pm$  0.05

---

#### ANEROID/ALTITUDE COMPENSATOR TEST

#### SETTING

Rated speed rpm : 500  
Pressure hPa : 1500  
rack travel mm : 11.20  
Tolerance mm :  $\pm$  0.05

#### MEASUREMENT

Pressure hPa : -  
Rated speed rpm : 500  
rack travel mm : 8.20  
Tolerance mm :  $\pm$  0.20

Rated speed rpm : 500

Pressure hPa : 290  
rack travel mm : 9.00  
Tolerance mm :  $\pm$  0.15

Pressure hPa : 540  
rack travel mm : 10.40  
Tolerance mm :  $\pm$  0.05

---

#### START CUT-OUT

Rated speed rpm :  $<$  170  
Check  
speed 1/min :  $<$  190

---

#### FUEL DELIVERY CHARACTERISTICS

Aneroid pressure  
hPa : 1500  
Rated speed rpm : 950  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 245.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  4.0  
Check tolerance  
cm<sup>3</sup>/1000s. :  $\pm$  6.0

Aneroid pressure  
hPa : -  
Rated speed rpm : 500  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 153.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  1.0  
Check tolerance  
cm<sup>3</sup>/1000s. :  $\pm$  4.0

---

#### BREAKAWAY

Rack travel in mm : 10.90  
Rated speed rpm : 995  
Tolerance 1/min :  $\pm$  5

---

#### STARTING FUEL DELIVERY

Rated speed rpm : 100  
rack travel mm : 20.50  
Tolerance mm :  $\pm$  0.50

---

#### LOW IDLE

Rated speed rpm : 250  
rack travel mm : 5.60  
Tolerance mm :  $\pm$  0.30  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 16.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  3.0  
Check tolerance  
cm<sup>3</sup>/1000s. :  $\pm$  6.0  
Speed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 4.0



Check tolerance  
cm<sup>3</sup>/1000S. : 8.0

---

End of test specification sheet

# BOSCH INJ. PUMP TEST SPECIFICATIONS

## Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 05.10.95  
Test oil : ISO 4113

Combination No. : 0 402 946 019

Injection pump  
Pump designation : PE6P120A720RS8041  
EP type number : 0 412 926 027

Governor  
Governor design. : RQV250...950PA1253  
: -1  
Governor no. : 0 421 814 167

Cust. part No. : 1383216

Customer-spec. information  
Customer : SCANIA  
Motor : DSC 11.74

## TEST BENCH REQUIREMENTS

Inlet line : EHAB

Test oil inlet  
temp. °C : 40  
Tolerance °C : ± 2.0

Overflow valve : 2 417 413 082

Inlet press. bar : 2.5  
Tolerance bar : ± 0.1

Test nozzle holder  
assembly : 1 688 901 104

Opening pressure  
bar : 251.5  
Tolerance bar : ± 1.5

Test lines : 1 680 750 008

Outside diameter : 6.0

x inside diameter : 2.0  
x length mm : 600

## REMARKS

Start-of-delivery setting with ROBO diaphragm.

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

## BEGINNING OF DELIVERY

Test pressure bar : 26.0  
Tolerance bar : ± 1.0

Prestroke mm : 4.40  
Tolerance mm : ± 0.05

test only : ± 0.10

Rack travel in mm : 20.50  
Tolerance mm : ± 0.50

Firing order : 1- 5- 3- 6- 2-  
: 4

Phasing : 0-60-120-180-240  
: -300

Tolerance : ± 0.30

Check  
tolerance °NW : ± 0.50

Start of delivery blocking

Barrel no. : 1

## BASIC SETTING

Rated speed rpm : 700

Rack travel in mm : 10.35  
Tolerance mm : ± 0.05

Del. quantity  
cm<sup>3</sup>/1000 strokes : 227.0

Tolerance  
cm<sup>3</sup>/1000 strokes : ± 1.0

---

Check tolerance  
cm<sup>3</sup>/1000S. : + 4.0

---

Spread  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0

---

Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

---

Rated speed rpm : 250

Rack travel in mm : 5.60  
Tolerance mm : + 0.30

Del. quantity  
cm<sup>3</sup>/1000 strokes : 16.0

Tolerance  
cm<sup>3</sup>/1000 strokes : + 3.0

Check tolerance  
cm<sup>3</sup>/1000S. : + 6.0

Spread  
Tolerance  
cm<sup>3</sup>/1000 strokes : 4.0

Check tolerance  
cm<sup>3</sup>/1000S. : 8.0

#### (B) SETTING OF INJECTION PUMP WITH GOVERNOR

---

##### GUIDE SLEEVE TRAVEL

Rated speed rpm : 250  
guide sleeve  
travel mm : 1.31  
Tolerance mm : + 0.20

Rated speed rpm : 1005  
guide sleeve  
travel mm : 7.25  
Tolerance mm : + 0.15

Rated speed rpm : 673  
guide sleeve  
travel mm : 4.96  
Tolerance mm : + 0.25

Rated speed rpm : 420  
guide sleeve  
travel mm : 3.37  
Tolerance mm : + 0.25

Rated speed rpm : 1390  
guide sleeve  
travel mm : 11.50  
Tolerance mm : + 0.50

---

##### GUIDE SLEEVE POSITION

Rated speed rpm : 1250

Rack travel in mm : 9.35  
Tolerance mm : + 1.30

---

##### FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 700

Aneroid pressure  
hPa : 1500

Del. quantity  
cm<sup>3</sup>/1000 strokes : 227.0

Tolerance  
cm<sup>3</sup>/1000 strokes : + 1.0

Check tolerance  
cm<sup>3</sup>/1000S. : + 4.0

Spread  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0

Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

---

##### RATED SPEED

control lever  
position degree : 58.0  
tolerance degree : + 4.0

control lever  
position degree : 111.0  
tolerance degree : + 4.0

rack travel mm : 10.90  
Rated speed rpm : 995  
Tolerance 1/min : + 5

rack travel mm : 4.00  
Rated speed rpm : 1190  
Tolerance 1/min : + 15

rack travel mm : 0.50  
Tolerance mm : + 0.50  
Rated speed rpm : 1200

---

##### LOW IDLE

control lever  
position degree : 66.0  
tolerance degree : + 4.0

control lever  
position degree : 12.0  
tolerance degree :  $\pm$  4.0

#### Testing:

Rated speed rpm : 250  
rack travel mm : 5.60  
Tolerance mm :  $\pm$  0.10

Rated speed rpm : 150  
CRT mm min. :  $>$  6.15

Rated speed rpm : 300

#### TORQUE CONTROL

Rated speed rpm : 700  
rack travel mm : 10.35  
Tolerance mm :  $\pm$  0.05

Rated speed rpm : 950  
rack travel mm : 10.35  
Tolerance mm :  $\pm$  0.05

#### ANEROID/ALTITUDE COMPENSATOR TEST

##### SETTING

Rated speed rpm : 500  
Pressure hPa : 1500  
rack travel mm : 10.35  
Tolerance mm :  $\pm$  0.05

##### MEASUREMENT

Pressure hPa : -  
Rated speed rpm : 500  
rack travel mm : 8.20  
Tolerance mm :  $\pm$  0.20

Rated speed rpm : 500

Pressure hPa : 260  
rack travel mm : 8.80  
Tolerance mm :  $\pm$  0.15

Pressure hPa : 430  
rack travel mm : 9.80  
Tolerance mm :  $\pm$  0.05

#### START CUT-OUT

Rated speed rpm :  $<$  170  
Check  
speed 1/min :  $<$  190

#### FUEL DELIVERY CHARACTERISTICS

Aneroid pressure  
hPa : 1500  
Rated speed rpm : 950  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 216.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  4.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  6.0

Aneroid pressure  
hPa : -  
Rated speed rpm : 500  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 153.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  1.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  4.0

#### BREAKAWAY

Rack travel in mm : 10.90  
Rated speed rpm : 995  
Tolerance 1/min :  $\pm$  5

#### STARTING FUEL DELIVERY

Rated speed rpm : 100  
rack travel mm : 20.50  
Tolerance mm :  $\pm$  0.50

#### LOW IDLE

Rated speed rpm : 250  
rack travel mm : 5.60  
Tolerance mm :  $\pm$  0.30  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 16.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  3.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  6.0  
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 4.0

Check tolerance  
cm<sup>3</sup>/1000S. : 8.0

---

End of test specification sheet

# BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 29.09.95  
Test oil : ISO 4113  
Combination No. : 0 403 476 048  
Injection pump  
Pump designation : PES6MW100/320RS1135  
EP type number : 0 413 406 127  
Governor  
Governor design. : RSV325...1250MW2A308  
: -3  
Governor no. : 0 420 085 057  
Cust. part No. :

Customer-spec. information  
Customer : VOLVO-PENTA  
Motor : TD 61 AW  
Power kW : 125.0

## TEST BENCH REQUIREMENTS

Inlet line : 3.1  
Test oil inlet  
temp. °C : 40  
Tolerance °C : ± 2.0  
Overflow valve : 1 417 413 000  
Inlet press. bar : 1.5  
Test nozzle holde  
assembly : 0 681 343 009  
Opening pressure  
bar : 173.5  
Tolerance bar : ± 1.5  
Test lines : 1 680 750 014  
Outside diameter : 6.0

J10

x inside diameter : 2.0  
x length mm : 600

## REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

## BEGINNING OF DELIVERY

Test pressure bar : 31.0  
Tolerance bar : ± 1.0  
Prestroke mm : 2.95  
Tolerance mm : ± 0.05  
test only : ± 0.10  
Rack travel in mm : 10.50  
Tolerance mm : ± 1.50  
Firing order : 1- 5- 3- 6- 2-  
: 4  
Phasing : 0-60-120-180-240  
: -300  
Tolerance : ± 0.50  
Check  
tolerance °NW : ± 0.75  
Start of delivery mark  
Barrel no. : 1

## BASIC SETTING

Rated speed rpm : 800  
Rack travel in mm : 11.05  
Tolerance mm : ± 0.05  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 86.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 1.0  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 3.0

---

Spread  
Tolerance  
cm<sup>3</sup>/1000 strokes : 3.5

---

Check tolerance  
cm<sup>3</sup>/1000S. : 6.0

Rated speed rpm : 325

Rack travel in mm : 8.75  
Tolerance mm : +- 0.20

Del. quantity  
cm<sup>3</sup>/1000 strokes : 19.0

Tolerance  
cm<sup>3</sup>/1000 strokes : +- 2.0

Check tolerance  
cm<sup>3</sup>/1000S. : +- 4.5

Spread  
Tolerance  
cm<sup>3</sup>/1000 strokes : 3.5

Check tolerance  
cm<sup>3</sup>/1000S. : 5.5

#### (B) SETTING OF INJECTION PUMP WITH GOVERNOR

---

##### GUIDE SLEEVE POSITION

governor spring  
pre-tension  
click setting x : 4.00

---

##### FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 800  
Aneroid pressure  
hPa : -

Del. quantity  
cm<sup>3</sup>/1000 strokes : 86.0

Tolerance  
cm<sup>3</sup>/1000 strokes : +- 1.0

Check tolerance  
cm<sup>3</sup>/1000S. : +- 3.0

Spread  
Tolerance  
cm<sup>3</sup>/1000 strokes : 3.5

Check tolerance  
cm<sup>3</sup>/1000S. : 6.0

---

##### RATED SPEED

rack travel mm : 10.00  
Rated speed rpm : 1295

Tolerance 1/min : +- 5

rack travel mm : 1.00  
Tolerance mm : +- 0.70  
Rated speed rpm : 1450

---

##### LOW IDLE

##### Testing:

Rated speed rpm : 325  
rack travel mm : 8.75

Tolerance mm : +- 0.05

---

##### TORQUE CONTROL

Rated speed rpm : 800  
rack travel mm : 11.05

Tolerance mm : +- 0.05

Rated speed rpm : 1000  
rack travel mm : 11.05

Tolerance mm : +- 0.10

---

##### FUEL DELIVERY CHARACTERISTICS

##### Aneroid pressure

hPa : -  
Rated speed rpm : 1000

Del. quantity  
cm<sup>3</sup>/1000 strokes : 89.5

Tolerance  
cm<sup>3</sup>/1000 strokes : +- 2.0

Check tolerance  
cm<sup>3</sup>/1000S. : +- 4.0

Spread  
Tolerance  
cm<sup>3</sup>/1000 strokes : 5.0

Check tolerance  
cm<sup>3</sup>/1000S. : 7.0

---

##### BREAKAWAY

Rack travel in mm : 10.00  
Rated speed rpm : 1295

Tolerance 1/min : +- 5

---

##### STARTING FUEL DELIVERY

Rated speed rpm : 100  
rack travel mm : 20.00

Tolerance mm : +- 1.00

Del. quantity  
cm<sup>3</sup>/1000 strokes : 100.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 5.0  
Check tolerance  
cm<sup>3</sup>/1000s. : ± 8.0

---

#### LOW IDLE

Rated speed rpm : 325  
rack travel mm : 8.75  
Tolerance mm : ± 0.20  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 19.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 2.0  
Check tolerance  
cm<sup>3</sup>/1000s. : ± 4.5  
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 3.5  
Check tolerance  
cm<sup>3</sup>/1000s. : 5.5

---

End of test specification sheet



# BOSCH INJ. PUMP TEST SPECIFICATIONS

## Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 19.07.95

Test oil : ISO 4113

Combination No. : 0 401 408 050

## Injection pump

Pump designation : PE8R120/500/6RS1509

EP type number : 0 401 408 050

## Governor

Governer design. :

Governer no. :

Cust. part No. : 1 227 6686

## Customer-spec. information

Customer : MWM

Motor : TBD 616-V16

## TEST BENCH REQUIREMENTS

Inlet line : 3.1

## Test oil inlet

temp. °C : 40

Tolerance °C : ± 2.0

Overflow valve : 2 417 413 082

Inlet press. bar : 3.0

Tolerance bar : ± 0.1

## Test nozzle holde assembly

: 1 688 901 105

## Opening pressure bar

: 208.5

Tolerance bar : ± 1.5

Test Lines : 1 680 750 089

Outside diameter : 8.0

x inside diameter : 3.0

x length mm : 600

## REMARKS

## (A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.  
per values \_\_\_\_\_

## BEGINNING OF DELIVERY

Test pressure bar : 26.0

Tolerance bar : ± 1.0

Prestroke mm : 4.95

Tolerance mm : ± 0.05

test only : ± 0.10

Rack travel in mm : 21.00

Tolerance mm : ± 0.50

Firing order : 1- 2- 5- 6- 3- 4  
: - 7- 8

Phasing : 0-30-45-75-270-300

: -315-345

Tolerance : ± 0.30

## Check

tolerance °NW : ± 0.50

## Start of delivery mark

Barrel no. : 1

## BASIC SETTING

Rated speed rpm : 1150

Rack travel in mm : 14.40

Tolerance mm : ± 0.05

## Del. quantity

cm<sup>3</sup>/1000 strokes : 387.0

## Tolerance

cm<sup>3</sup>/1000 strokes : ± 1.0

## Check tolerance

cm<sup>3</sup>/1000S. : ± 4.0

## Speed

Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0

Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

Rated speed rpm : 300

Rack travel in mm : 5.00  
Tolerance mm : ± 0.20

Del. quantity  
cm<sup>3</sup>/1000 strokes : 30.0

Tolerance  
cm<sup>3</sup>/1000 strokes : ± 3.0

Check tolerance  
cm<sup>3</sup>/1000S. : ± 6.0

Spread  
Tolerance  
cm<sup>3</sup>/1000 strokes : 10.0

Check tolerance  
cm<sup>3</sup>/1000S. : 14.0

(B) SETTING OF INJECTION PUMP  
WITH GOVERNOR

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1150  
Aneroid pressure  
hPa : -

Del. quantity  
cm<sup>3</sup>/1000 strokes : 387.0

Tolerance  
cm<sup>3</sup>/1000 strokes : ± 1.0

Check tolerance  
cm<sup>3</sup>/1000S. : ± 4.0

Spread  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0

Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

TORQUE CONTROL

Rated speed rpm : 1150  
rack travel mm : 14.40  
Tolerance mm : ± 0.05

LOW IDLE

Rated speed rpm : 300  
rack travel mm : 5.00

Tolerance mm : ± 0.20  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 30.0

Tolerance  
cm<sup>3</sup>/1000 strokes : ± 3.0

Check tolerance  
cm<sup>3</sup>/1000S. : ± 6.0

Spread  
Tolerance  
cm<sup>3</sup>/1000 strokes : 10.0

Check tolerance  
cm<sup>3</sup>/1000S. : 14.0

End of test specification sheet

# BOSCH INJ. PUMP TEST SPECIFICATIONS

## Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 06.04.95

Test oil : ISO 4113

Combination No. : 0 402 670 810

## Injection pump

Pump designation : PE12P120A520/5RS7375

EP type number : 0 412 620 844

## Governor

Governer design. : RSUV300...900POA361

Governer no. : 0 421 829 110

Cust. part No. : 1 2277 426

## Customer-spec. information

Customer : MWM

Motor : TBD 616-V12

Power KW : 648.0

## TEST BENCH REQUIREMENTS

Inlet line : 3.2

Test oil inlet

temp. °C : 40

Tolerance °C : ± 2.0

Overflow valve : 1 417 413 025

Inlet press. bar : 1.5

Tolerance bar : ± 0.1

Test nozzle holde  
assembly

: 1 688 901 019

Opening pressure  
bar

: 208.5

Tolerance bar : ± 1.5

Test lines : 1 680 750 075

Outside diameter : 8.0

x inside diameter : 3.0

x length mm : 1000

## REMARKS

## (A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values \_\_\_\_\_

## BEGINNING OF DELIVERY

Test pressure bar : 26.0

Tolerance bar : ± 1.0

Prestroke mm : 4.60

Tolerance mm : ± 0.05

test only : ± 0.10

Rack travel in mm : 13.00

Tolerance mm : ± 0.50

Firing order : 1- 2- 9-10- 5- 6  
: - 11- 12- 3- 4  
: - 7- 8

Phasing : 0-30-60-90-120-150

: -180-210-240-270

: -300-330

Tolerance : ± 0.30

Check

tolerance °NW : ± 0.50

Start of delivery mark

Barrel no. : 1

## BASIC SETTING

Rated speed rpm : 700

Rack travel in mm : 13.30

Tolerance mm : ± 0.05

Del. quantity

cm<sup>3</sup>/1000 strokes : 325.0

Tolerance

cm<sup>3</sup>/1000 strokes : ± 1.0

Check tolerance  
cm3/1000S. : + 4.0

Spread  
Tolerance  
cm3/1000 strokes : 6.0

Check tolerance  
cm3/1000S. : 9.0

Rated speed rpm : 325

Rack travel in mm : 4.30  
Tolerance mm : +- 0.30

Del. quantity  
cm3/1000 strokes : 30.0

Tolerance  
cm3/1000 strokes : +- 3.0

Check tolerance  
cm3/1000S. : +- 6.0

Spread  
Tolerance  
cm3/1000 strokes : 8.0

Check tolerance  
cm3/1000S. : 12.0

#### (B) SETTING OF INJECTION PUMP WITH GOVERNOR

##### GUIDE SLEEVE POSITION

governor spring  
pre-tension  
click setting x : 3.25

##### FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 700

Aneroid pressure  
hPa : -

Del. quantity  
cm3/1000 strokes : 325.0

Tolerance  
cm3/1000 strokes : +- 1.0

Check tolerance  
cm3/1000S. : +- 4.0

Spread  
Tolerance  
cm3/1000 strokes : 6.0

Check tolerance  
cm3/1000S. : 9.0

##### CONTROL LEVER

control lever  
position degree : 109.0  
tolerance degree : +- 4.0

##### RATED SPEED

rack travel mm : 1.00  
Tolerance mm : +- 0.70  
Rated speed rpm : 950

Rated speed rpm : 750  
rack travel mm : 12.30

Rated speed rpm : 784  
Tolerance 1/min : +- 4  
rack travel mm : 4.00

rack travel mm : 1.00  
Tolerance mm : +- 0.70

Rated speed rpm : 751  
rack travel mm : 12.30

Rated speed rpm : 785  
Tolerance 1/min : +- 4  
rack travel mm : 4.00

rack travel mm : 1.00  
Tolerance mm : +- 0.70

Rated speed rpm : 752  
rack travel mm : 12.30

Rated speed rpm : 786  
Tolerance 1/min : +- 4  
rack travel mm : 4.00

rack travel mm : 1.00  
Tolerance mm : +- 0.70

Rated speed rpm : 753  
rack travel mm : 12.30

Rated speed rpm : 787  
Tolerance 1/min : +- 4  
rack travel mm : 4.00

rack travel mm : 1.00  
Tolerance mm : +- 0.70

Rated speed rpm : 754  
rack travel mm : 12.30

Rated speed rpm : 788  
Tolerance 1/min : +- 4  
rack travel mm : 4.00

rack travel mm : 1.00  
Tolerance mm :  $\pm$  0.70

Rated speed rpm : 755  
rack travel mm : 12.30

Rated speed rpm : 789  
Tolerance 1/min :  $\pm$  4  
rack travel mm : 4.00

rack travel mm : 1.00  
Tolerance mm :  $\pm$  0.70

---

#### LOW IDLE

control lever  
position degree : 81.0  
tolerance degree :  $\pm$  4.0

Setting point w/out bumper spring

Rated speed rpm : 325  
rack travel mm : 3.80

#### Testing:

Rated speed rpm : 325  
rack travel mm : 4.30  
Tolerance mm :  $\pm$  0.10

rack travel mm : 2.00  
Rated speed rpm : 360  
Tolerance 1/min :  $\pm$  30

---

#### TORQUE CONTROL

Rated speed rpm : 700  
rack travel mm : 13.30  
Tolerance mm :  $\pm$  0.05

---

#### STARTING FUEL DELIVERY

Rated speed rpm : 100  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 350.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  20.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  24.0

---

#### LOW IDLE

Rated speed rpm : 325  
rack travel mm : 4.30  
Tolerance mm :  $\pm$  0.30  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 30.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  3.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  6.0  
Speed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

---

End of test specification sheet

# BOSCH INJ. PUMP TEST SPECIFICATIONS

## Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 27.06.95  
Test oil : ISO 4113  
Combination No. : 0 402 678 828  
Injection pump  
Pump designation : PE8P120A520/5RS7381  
EP type number : 0 412 628 907  
Governor  
Governor design. : RSUV300...900POA363  
Governor no. : 0 421 829 111

Cust. part No. : 1 2277 434

Customer-spec. information  
Customer : MWM  
Motor : TBD 616  
Power KW : 432.0

## TEST BENCH REQUIREMENTS

Inlet line : 3.1  
Test oil inlet  
temp. °C : 40  
Tolerance °C : ± 2.0  
Overflow valve : 1 417 413 025

Inlet press. bar : 1.5  
Tolerance bar : ± 0.1

Test nozzle holde  
assembly : 1 688 901 019

Opening pressure  
bar : 208.5  
Tolerance bar : ± 1.5

Test lines : 1 680 750 075

Outside diameter : 8.0

x inside diameter : 3.0  
x length mm : 1000

## REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

## BEGINNING OF DELIVERY

Test pressure bar : 26.0  
Tolerance bar : ± 1.0

Prestroke mm : 4.60  
Tolerance mm : ± 0.05

test only : ± 0.10

Rack travel in mm : 13.00  
Tolerance mm : ± 0.50

Firing order : 1- 8- 5- 4- 7  
: - 2- 3- 6

Phasing : 0-30-90-120-180  
: -210-270-300

Tolerance : ± 0.30  
Check  
tolerance \*NW : ± 0.50

Start of delivery mark

Barrel no. : 1

## BASIC SETTING

Rated speed rpm : 700

Rack travel in mm : 13.30  
Tolerance mm : ± 0.05

Del. quantity  
cm<sup>3</sup>/1000 strokes : 325.0

Tolerance  
cm<sup>3</sup>/1000 strokes : ± 1.0

Check tolerance  
cm<sup>3</sup>/1000S. : ± 4.0

|                                 |        |
|---------------------------------|--------|
| <hr/>                           |        |
| Speed                           |        |
| Tolerance                       |        |
| cm <sup>3</sup> /1000 strokes : | 6.0    |
| <hr/>                           |        |
| Check tolerance                 |        |
| cm <sup>3</sup> /1000S. :       | 9.0    |
| <hr/>                           |        |
| Rated speed rpm :               | 325    |
| <hr/>                           |        |
| Rack travel in mm :             | 4.30   |
| Tolerance mm :                  | + 0.30 |
| Del. quantity                   |        |
| cm <sup>3</sup> /1000 strokes : | 30.0   |
| Tolerance                       |        |
| cm <sup>3</sup> /1000 strokes : | + 3.0  |
| Check tolerance                 |        |
| cm <sup>3</sup> /1000S. :       | + 6.0  |
| Speed                           |        |
| Tolerance                       |        |
| cm <sup>3</sup> /1000 strokes : | 8.0    |
| Check tolerance                 |        |
| cm <sup>3</sup> /1000S. :       | 12.0   |

(B) SETTING OF INJECTION PUMP  
WITH GOVERNOR

---

GUIDE SLEEVE POSITION

|                   |      |
|-------------------|------|
| governor spring   |      |
| pre-tension       |      |
| click setting x : | 3.25 |

---

FULL LOAD DELIVERY AT FULL LOAD STOP

|                                 |       |
|---------------------------------|-------|
| Rated speed rpm :               | 700   |
| Aneroid pressure                |       |
| hPa :                           | -     |
| Del. quantity                   |       |
| cm <sup>3</sup> /1000 strokes : | 325.0 |
| Tolerance                       |       |
| cm <sup>3</sup> /1000 strokes : | + 1.0 |
| Check tolerance                 |       |
| cm <sup>3</sup> /1000S. :       | + 4.0 |
| Speed                           |       |
| Tolerance                       |       |
| cm <sup>3</sup> /1000 strokes : | 6.0   |
| Check tolerance                 |       |
| cm <sup>3</sup> /1000S. :       | 9.0   |

---

CONTROL LEVER

|                   |       |
|-------------------|-------|
| control lever     |       |
| position degree : | 109.0 |

|                    |       |
|--------------------|-------|
| tolerance degree : | + 4.0 |
|--------------------|-------|

RATED SPEED

|                   |        |
|-------------------|--------|
| rack travel mm :  | 1.00   |
| Tolerance mm :    | + 0.70 |
| Rated speed rpm : | 950    |

|                   |       |
|-------------------|-------|
| Rated speed rpm : | 750   |
| rack travel mm :  | 12.30 |

|                   |      |
|-------------------|------|
| Rated speed rpm : | 784  |
| Tolerance 1/min : | + 4  |
| rack travel mm :  | 4.00 |

|                  |        |
|------------------|--------|
| rack travel mm : | 1.00   |
| Tolerance mm :   | + 0.70 |

|                   |       |
|-------------------|-------|
| Rated speed rpm : | 751   |
| rack travel mm :  | 12.30 |

|                   |      |
|-------------------|------|
| Rated speed rpm : | 785  |
| Tolerance 1/min : | + 4  |
| rack travel mm :  | 4.00 |

|                  |        |
|------------------|--------|
| rack travel mm : | 1.00   |
| Tolerance mm :   | + 0.70 |

|                   |       |
|-------------------|-------|
| Rated speed rpm : | 752   |
| rack travel mm :  | 12.30 |

|                   |      |
|-------------------|------|
| Rated speed rpm : | 786  |
| Tolerance 1/min : | + 4  |
| rack travel mm :  | 4.00 |

|                  |        |
|------------------|--------|
| rack travel mm : | 1.00   |
| Tolerance mm :   | + 0.70 |

|                   |       |
|-------------------|-------|
| Rated speed rpm : | 753   |
| rack travel mm :  | 12.30 |

|                   |      |
|-------------------|------|
| Rated speed rpm : | 787  |
| Tolerance 1/min : | + 4  |
| rack travel mm :  | 4.00 |

|                  |        |
|------------------|--------|
| rack travel mm : | 1.00   |
| Tolerance mm :   | + 0.70 |

|                   |       |
|-------------------|-------|
| Rated speed rpm : | 754   |
| rack travel mm :  | 12.30 |

|                   |      |
|-------------------|------|
| Rated speed rpm : | 788  |
| Tolerance 1/min : | + 4  |
| rack travel mm :  | 4.00 |

|                  |        |
|------------------|--------|
| rack travel mm : | 1.00   |
| Tolerance mm :   | + 0.70 |

Rated speed rpm : 755  
rack travel mm : 12.30  
  
Rated speed rpm : 789  
Tolerance 1/min :  $\pm$  4  
rack travel mm : 4.00  
  
rack travel mm : 1.00  
Tolerance mm :  $\pm$  0.70

---

#### LOW IDLE

control lever  
position degree : 81.0  
tolerance degree :  $\pm$  4.0

#### Setting point w/out bumper spring

Rated speed rpm : 325  
rack travel mm : 3.80

#### Testing:

Rated speed rpm : 325  
rack travel mm : 4.30  
Tolerance mm :  $\pm$  0.10

rack travel mm : 2.00  
Rated speed rpm : 360  
Tolerance 1/min :  $\pm$  30

---

#### TORQUE CONTROL

Rated speed rpm : 700  
rack travel mm : 13.30  
Tolerance mm :  $\pm$  0.05

---

#### STARTING FUEL DELIVERY

Rated speed rpm : 100  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 350.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  20.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  24.0

---

#### LOW IDLE

J20

Rated speed rpm : 325  
rack travel mm : 4.30  
Tolerance mm :  $\pm$  0.30  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 30.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  3.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  6.0  
Speed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

---

End of test specification sheet



# BOSCH INJ. PUMP TEST SPECIFICATIONS

## Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 30.08.95  
Test oil : ISO 4113

Combination No. : 0 402 678 830

Injection pump  
Pump designation : PE8P120A520/5RS7386  
EP type number : 0 412 628 910

Governor  
Governor design. : RSUV325...1150POA358  
: -1  
Governor no. : 0 421 829 106

Cust. part No. : 12277649KY0120-17

Customer-spec. information  
Customer : MWM  
Motor : TBD 616 V16  
Power KW : 864.0

## TEST BENCH REQUIREMENTS

Inlet line : 3.1

Test oil inlet  
temp. °C : 40  
Tolerance °C : ± 2.0

Overflow valve : 1 417 413 025

Inlet press. bar : 1.5  
Tolerance bar : ± 0.1

Test nozzle holde  
assembly : 1 688 901 019

Opening pressure  
bar : 208.5  
Tolerance bar : ± 1.5

Test lines : 1 680 750 075

Outside diameter : 8.0  
x inside diameter : 3.0  
x length mm : 1000

## REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

## BEGINNING OF DELIVERY

Test pressure bar : 26.0  
Tolerance bar : ± 1.0

Prestroke mm : 4.65  
Tolerance mm : ± 0.05

test only : ± 0.10

Rack travel in mm : 13.00  
Tolerance mm : ± 0.10

Firing order : 1- 2- 7- 8- 3- 4-  
: 5- 6

Phasing : 0-30-45-75-90-120  
: -315-345

Tolerance : ± 0.30  
Check  
tolerance \*NW : ± 0.50

Start of delivery mark

Barrel no. : 1

## BASIC SETTING

Rated speed rpm : 1150

Rack travel in mm : 12.60  
Tolerance mm : ± 0.05

Del. quantity  
cm<sup>3</sup>/1000 strokes : 262.0

Tolerance  
cm<sup>3</sup>/1000 strokes : ± 1.0

Check tolerance  
cm<sup>3</sup>/1000S. : + 4.0

---

Spread  
Tolerance  
cm<sup>3</sup>/1000 strokes : 6.0

---

Check tolerance  
cm<sup>3</sup>/1000S. : 9.0

Rated speed rpm : 300

Rack travel in mm : 6.40  
Tolerance mm : + 0.20

Del. quantity  
cm<sup>3</sup>/1000 strokes : 38.0  
Tolerance

cm<sup>3</sup>/1000 strokes : + 3.0

Check tolerance  
cm<sup>3</sup>/1000S. : + 6.0

Spread  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0

Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

#### (B) SETTING OF INJECTION PUMP WITH GOVERNOR

---

##### FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1150  
Aneroid pressure  
hPa : -

Del. quantity  
cm<sup>3</sup>/1000 strokes : 262.0

Tolerance  
cm<sup>3</sup>/1000 strokes : + 1.0

Check tolerance  
cm<sup>3</sup>/1000S. : + 4.0

Spread  
Tolerance

cm<sup>3</sup>/1000 strokes : 6.0

Check tolerance  
cm<sup>3</sup>/1000S. : 9.0

---

##### CONTROL LEVER

control lever  
position degree : 123.0  
tolerance degree : + 4.0

##### RATED SPEED

rack travel mm : 11.60

Rated speed rpm : 1193  
Tolerance 1/min : + 5

rack travel mm : 4.00  
Rated speed rpm : 1270  
Tolerance 1/min : + 15

rack travel mm : 0.85  
Tolerance mm : + 0.55  
Rated speed rpm : 1380

rack travel mm : 4.00  
Rated speed rpm : 1285

---

##### LOW IDLE

control lever  
position degree : 84.0  
tolerance degree : + 4.0

##### Setting point w/out bumper spring

Rated speed rpm : 300  
rack travel mm : 5.90

##### Testing:

Rated speed rpm : 300  
rack travel mm : 6.40  
Tolerance mm : + 0.10

rack travel mm : 2.00  
Rated speed rpm : 460  
Tolerance 1/min : + 30

---

##### TORQUE CONTROL

Rated speed rpm : 1150  
rack travel mm : 12.60  
Tolerance mm : + 0.05

Rated speed rpm : 800  
rack travel mm : 12.60  
Tolerance mm : + 0.10

---

##### ANEROID/ALTITUDE COMPENSATOR TEST

##### SETTING

Rated speed rpm : 600  
Pressure hPa : 1250  
rack travel mm : 12.60  
Tolerance mm : + 0.05

## MEASUREMENT

Pressure hPa : -  
Rated speed rpm : 600  
rack travel mm : 8.50  
Tolerance mm :  $\pm$  0.20

Rated speed rpm : 600

Pressure hPa : 670  
rack travel mm : 11.40  
Tolerance mm :  $\pm$  0.20

Pressure hPa : 450  
rack travel mm : 9.60  
Tolerance mm :  $\pm$  0.05

## FUEL DELIVERY CHARACTERISTICS

Aneroid pressure  
hPa : -  
Rated speed rpm : 800  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 261.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  3.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  6.0  
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

Aneroid pressure  
hPa : -  
Rated speed rpm : 500  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 131.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  1.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  4.0  
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 6.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

## BREAKAWAY

Rack travel in mm : 11.60  
Rated speed rpm : 1193  
Tolerance 1/min :  $\pm$  5

## STARTING FUEL DELIVERY

Rated speed rpm : 100  
rack travel mm :  $>$  19.50

## LOW IDLE

Rated speed rpm : 300  
rack travel mm : 6.40  
Tolerance mm :  $\pm$  0.20  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 38.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  3.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  6.0  
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

End of test specification sheet

# BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 12.09.95  
Test oil : ISO 4113

Combination No. : 0 401 416 050

Injection pump  
Pump designation : PE6R130/700RS1511  
EP type number : 0 411 436 003

Governor  
Governor design. :  
Governor no. :

Cust. part No. : 3825418 P03

Customer-spec. information  
Customer : PENTA  
Motor : TAD 1631 G  
Power KW : 558.0

## TEST BENCH REQUIREMENTS

Inlet line : 3.2

Test oil inlet  
temp. °C : 40  
Tolerance °C : ± 2.0

Overflow valve : 2 417 413 078

Inlet press. bar : 2.5  
Tolerance bar : ± 0.1

Test nozzle holde  
assembly : 1 688 901 105

Opening pressure  
bar : 208.5  
Tolerance bar : ± 1.5

Test lines : 1 680 750 089

Outside diameter : 8.0

x inside diameter : 3.0  
x length mm : 600

## REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

## BEGINNING OF DELIVERY

Test pressure bar : 26.0  
Tolerance bar : ± 1.0

Prestroke mm : 4.55  
Tolerance mm : ± 0.05

test only : ± 0.10

Rack travel in mm : 13.00  
Tolerance mm : ± 0.50

Firing order : 1- 5- 3- 6- 2-  
: 4

Phasing : 0-60-120-180-240  
: -300

Tolerance : ± 0.30  
Check  
tolerance \*NW : ± 0.50

Start of delivery mark

Barrel no. : 1

## BASIC SETTING

Rated speed rpm : 700

Rack travel in mm : 13.60  
Tolerance mm : ± 0.05

Del. quantity  
cm<sup>3</sup>/1000 strokes : 473.0

Tolerance  
cm<sup>3</sup>/1000 strokes : ± 2.0

Check tolerance  
cm<sup>3</sup>/1000s. : ± 5.0

---

Speed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 11.0

---

Check tolerance  
cm<sup>3</sup>/1000S. : 15.0

Del. quantity  
cm<sup>3</sup>/1000 strokes : 95.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  4.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  7.0

Speed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 11.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 15.0

(B) SETTING OF INJECTION PUMP  
WITH GOVERNOR

---

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 700  
Aneroid pressure  
hPa : -  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 473.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  2.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  5.0  
Speed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 11.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 15.0

---

LOW IDLE

Testing:

Rated speed rpm : 250  
rack travel mm : 6.25  
Tolerance mm :  $\pm$  0.20

---

TORQUE CONTROL

Rated speed rpm : 700  
rack travel mm : 13.60  
Tolerance mm :  $\pm$  0.95

---

LOW IDLE

Del. quantity  
cm<sup>3</sup>/1000 strokes : 95.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  4.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  7.0  
Speed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 11.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 15.0

---

End of test specification sheet

# BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 04.02.91  
Test oil : ISO 4113  
Combination No. : 0 400 836 043  
Injection pump  
Pump designation : PES6A100D320/3RS2691  
: -2  
EP type number : 9 410 230 028  
Governor  
Governor design. : RQV350...1200AB1245R  
Governor no. : 0 420 213 118

Cust. part No. :

Customer-spec. information  
Customer : CDC  
Motor : 6CT830  
Power KW : 157.0

## TEST BENCH REQUIREMENTS

Inlet line : 2

Test oil inlet  
temp. °C : 40  
Tolerance °C : ± 2.0

Overflow valve : 1 417 413 047

Inlet press. bar : 1.5

Test nozzle holde  
assembly : 1 688 901 017

Opening pressure  
bar : 208.5  
Tolerance bar : ± 1.5

Test lines : 1 680 750 014

Outside diameter : 6.0

x inside diameter : 2.0  
x length mm : 600

## REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

## BEGINNING OF DELIVERY

Test pressure bar : 28.0  
Tolerance bar : ± 1.0  
Firing order : 1- 5- 3- 6- 2-  
: 4

Phasing : 0-60-120-180-240  
: -300  
Tolerance : ± 0.50  
Check  
tolerance °NW : ± 0.75

## BASIC SETTING

Del. quantity  
cm3/1000 strokes : 114.0

Tolerance  
cm3/1000 strokes : ± 1.0

Check tolerance  
cm3/1000S. : ± 3.5

Speed  
Tolerance  
cm3/1000 strokes : 4.0

Check tolerance  
cm3/1000S. : 6.5

Rated speed rpm : 350

Rack travel in mm : 4.80  
Tolerance mm : ± 0.20

Del. quantity  
cm3/1000 strokes : 18.0

Tolerance  
cm3/1000 strokes : ± 2.0

Check tolerance  
cm3/1000S. : ± 4.5

Speed

Tolerance  
cm<sup>3</sup>/1000 strokes : 6.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 8.0

(B) SETTING OF INJECTION PUMP  
WITH GOVERNOR

---

GUIDE SLEEVE TRAVEL

Rated speed rpm : 250  
guide sleeve  
travel mm : 0.10  
Tolerance mm :  $\pm$  0.10

Rated speed rpm : 1200  
guide sleeve  
travel mm : 6.90

Rated speed rpm : 350  
guide sleeve  
travel mm : 1.25  
Tolerance mm :  $\pm$  0.25

Rated speed rpm : 450  
guide sleeve  
travel mm : 2.15  
Tolerance mm :  $\pm$  0.25

Rated speed rpm : 1350  
guide sleeve  
travel mm : 8.45  
Tolerance mm :  $\pm$  0.25

---

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1200  
Aneroid pressure  
hPa : -  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 114.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  1.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  3.5  
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 4.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 6.5

---

CONTROL LEVER

control lever  
position degree : 96.0

tolerance degree :  $\pm$  4.0

RATED SPEED

rack travel mm : 9.80  
Rated speed rpm : 1245  
Tolerance 1/min :  $\pm$  5

rack travel mm : 4.00  
Rated speed rpm : 1330  
Tolerance 1/min :  $\pm$  15

rack travel mm : 0.50  
Tolerance mm :  $\pm$  0.50  
Rated speed rpm : 1400

---

LOW IDLE

control lever  
position degree : 62.0  
tolerance degree :  $\pm$  4.0

Testing:

Rated speed rpm : 350  
rack travel mm : 4.80  
Tolerance mm :  $\pm$  0.10

rack travel mm : 2.00

---

START CUT-OUT

Rated speed rpm : < 290  
Check  
speed 1/min : < 300

---

BREAKAWAY

Rack travel in mm : 9.80  
Rated speed rpm : 1245  
Tolerance 1/min :  $\pm$  5

---

STARTING FUEL DELIVERY

Rated speed rpm : 100  
rack travel mm : 20.00  
Tolerance mm :  $\pm$  1.00  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 160.0

Tolerance  
cm<sup>3</sup>/1000 strokes : ± 10.0  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 13.0

---

LOW IDLE

Rated speed rpm : 350  
rack travel mm : 4.80  
Tolerance mm : ± 0.20  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 18.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 2.0  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 4.5  
Speed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 6.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 8.0

---

End of test specification sheet



# BOSCH INJ. PUMP TEST SPECIFICATIONS

## Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 04.10.95  
Test oil : ISO 4113  
Combination No. : 0 402 670 811  
Injection pump  
Pump designation : PE12P120A520/5RS7385  
EP type number : 0 412 620 846  
Governor  
Governor design. : RSUV300...1150POA364  
Governor no. : 0 421 829 112  
Cust. part No. : 12277646KY0120-17

## Customer-spec. information

Customer : MWM  
Motor : TBD 616-V12  
Power KW : 648.0

## TEST BENCH REQUIREMENTS

Inlet line : 3.1  
Test oil inlet  
temp. °C : 40  
Tolerance °C : ± 2.0  
Overflow valve : 1 417 413 025  
Inlet press. bar : 1.5  
Tolerance bar : ± 0.1  
Test nozzle holde  
assembly : 1 688 901 019  
Opening pressure  
bar : 208.5  
Tolerance bar : ± 1.5  
Test lines : 1 680 750 075  
Outside diameter : 8.0

K01

x inside diameter : 3.0  
x length mm : 1000

## REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

## BEGINNING OF DELIVERY

Test pressure bar : 26.0  
Tolerance bar : ± 1.0  
Prestroke mm : 4.65  
Tolerance mm : ± 0.05  
test only : ± 0.10  
Rack travel in mm : 13.00  
Tolerance mm : ± 0.50  
Firing order : 1- 2- 9-10- 5- 6  
                  : - 11- 12- 3- 4  
                  : - 7- 8  
Phasing : 0-30-60-90-120-150  
          : -180-210-240-270  
          : -300-330  
Tolerance : ± 0.30  
Check  
tolerance °NW : ± 0.50  
Start of delivery mark  
Barrel no. : 1

## BASIC SETTING

Rated speed rpm : 1150  
Rack travel in mm : 12.60  
Tolerance mm : ± 0.05  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 262.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 1.0

Check tolerance  
cm<sup>3</sup>/1000S. : ± 4.0

---

Spread  
Tolerance  
cm<sup>3</sup>/1000 strokes : 6.0

---

Check tolerance  
cm<sup>3</sup>/1000S. : 9.0

Rated speed rpm : 300

Rack travel in mm : 6.40  
Tolerance mm : ± 0.20

Del. quantity  
cm<sup>3</sup>/1000 strokes : 38.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 3.0  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 6.0

Spread  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

#### (B) SETTING OF INJECTION PUMP WITH GOVERNOR

---

##### GUIDE SLEEVE POSITION

Rated speed rpm : 800

Rack travel in mm : 0.50  
Tolerance mm : ± 0.20

---

##### FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1150  
Aneroid pressure  
hPa : 1250  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 262.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 1.0  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 4.0  
Spread  
Tolerance  
cm<sup>3</sup>/1000 strokes : 6.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 9.0

---

##### CONTROL LEVER

control lever  
position degree : 113.0  
tolerance degree : ± 4.0

##### RATED SPEED

rack travel mm : 11.60  
Rated speed rpm : 1193  
Tolerance 1/min : ± 5

rack travel mm : 4.00  
Rated speed rpm : 1270  
Tolerance 1/min : ± 15

rack travel mm : 1.00  
Tolerance mm : ± 0.70  
Rated speed rpm : 1380

rack travel mm : 4.00  
Rated speed rpm : 1280

---

##### LOW IDLE

control lever  
position degree : 74.0  
tolerance degree : ± 4.0

##### Setting point w/out bumper spring

Rated speed rpm : 300  
rack travel mm : 5.90

##### Testing:

Rated speed rpm : 300  
rack travel mm : 6.40  
Tolerance mm : ± 0.10

rack travel mm : 2.00  
Rated speed rpm : 450  
Tolerance 1/min : ± 30

---

##### TORQUE CONTROL

Rated speed rpm : 1150  
rack travel mm : 12.60  
Tolerance mm : ± 0.05

Rated speed rpm : 800  
rack travel mm : 12.60  
Tolerance mm : ± 0.10

Rated speed rpm : 500  
rack travel mm : 12.60  
Tolerance mm : ± 0.10

---

ANEROID/ALTITUDE  
COMPENSATOR TEST

SETTING

Rated speed rpm : 600  
Pressure hPa : 1250  
rack travel mm : 12.60  
Tolerance mm :  $\pm$  0.05

MEASUREMENT

Pressure hPa : -  
Rated speed rpm : 600  
rack travel mm : 8.60  
Tolerance mm :  $\pm$  0.10

Rated speed rpm : 600

Pressure hPa : 670  
rack travel mm : 11.40  
Tolerance mm :  $\pm$  0.10

Pressure hPa : 450  
rack travel mm : 9.60  
Tolerance mm :  $\pm$  0.05

---

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure  
hPa : 1250  
Rated speed rpm : 800  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 261.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  3.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  6.0  
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

Aneroid pressure  
hPa : -  
Rated speed rpm : 500  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 131.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  1.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  4.0  
Spreed

Tolerance  
cm<sup>3</sup>/1000 strokes : 6.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

---

BREAKAWAY

Rack travel in mm : 11.60  
Rated speed rpm : 1193  
Tolerance 1/min :  $\pm$  5

---

STARTING FUEL DELIVERY

Rated speed rpm : 100  
rack travel mm : 16.00  
Tolerance mm :  $\pm$  0.50  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 347.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  14.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  20.0

---

LOW IDLE

Rated speed rpm : 300  
rack travel mm : 6.40  
Tolerance mm :  $\pm$  0.20  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 38.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  3.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  6.0  
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

---

End of test specification sheet

# BOSCH INJ. PUMP TEST SPECIFICATIONS

## Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 29.09.95  
Test oil : ISO 4113  
Combination No. : 0 402 678 829  
Injection pump  
Pump designation : FE8P120A520/5RS7384  
EP type number : 0 412 628 909  
Governor  
Governor design. : RSUV300...1150POA364  
Governor no. : 0 421 829 112  
Cust. part No. : 12277644KY0120-17

## Customer-spec. information

Customer : MWM  
Motor : TBD 616 V8  
Power KW : 432.0

## TEST BENCH REQUIREMENTS

Inlet line : 3.1

Test oil inlet  
temp. °C : 40  
Tolerance °C : ± 2.0

Overflow valve : 1 417 413 025

Inlet press. bar : 1.5  
Tolerance bar : ± 0.1

Test nozzle holder  
assembly : 1 688 901 019

Opening pressure  
bar : 208.5  
Tolerance bar : ± 1.5

Test lines : 1 680 750 075

Outside diameter : 8.0

K04

x inside diameter : 3.0  
x length mm : 1000

## REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

## BEGINNING OF DELIVERY

Test pressure bar : 26.0  
Tolerance bar : ± 1.0

Prestroke mm : 4.65  
Tolerance mm : ± 0.05

test only : ± 0.10

Rack travel in mm : 13.00  
Tolerance mm : ± 0.50

Firing order : 1- 8- 5- 4- 7  
: - 2- 3- 6

Phasing : 0-30-90-120-180  
: -210-270-300  
Tolerance : ± 0.30  
Check  
tolerance °NW : ± 0.50

Start of delivery mark

Barrel no. : 1

## BASIC SETTING

Rated speed rpm : 1150

Rack travel in mm : 12.60  
Tolerance mm : ± 0.05

Del. quantity  
cm<sup>3</sup>/1000 strokes : 262.0

Tolerance  
cm<sup>3</sup>/1000 strokes : ± 1.0

Check tolerance  
cm<sup>3</sup>/1000s. : ± 4.0

---

Spread  
Tolerance  
cm<sup>3</sup>/1000 strokes : 6.0

---

Check tolerance  
cm<sup>3</sup>/1000S. : 9.0

Rated speed rpm : 300

Rack travel in mm : 6.40  
Tolerance mm :  $\pm$  0.20

Del. quantity  
cm<sup>3</sup>/1000 strokes : 38.0

Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  3.0

Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  6.0

Spread  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0

Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

---

(B) SETTING OF INJECTION PUMP  
WITH GOVERNOR

---

GUIDE SLEEVE POSITION

Rated speed rpm : 800

Rack travel in mm : 0.50  
Tolerance mm :  $\pm$  0.20

---

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1150  
Aneroid pressure  
hPa : -

Del. quantity  
cm<sup>3</sup>/1000 strokes : 262.0

Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  1.0

Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  4.0

Spread  
Tolerance  
cm<sup>3</sup>/1000 strokes : 6.0

Check tolerance  
cm<sup>3</sup>/1000S. : 9.0

---

CONTROL LEVER

control lever  
position degree : 115.0  
tolerance degree :  $\pm$  4.0

RATED SPEED

rack travel mm : 11.60  
Rated speed rpm : 1193  
Tolerance 1/min :  $\pm$  5

rack travel mm : 4.00  
Rated speed rpm : 1270  
Tolerance 1/min :  $\pm$  15

rack travel mm : 1.00  
Tolerance mm :  $\pm$  0.70  
Rated speed rpm : 1380

rack travel mm : 4.00  
Rated speed rpm : 1285

---

LOW IDLE

control lever  
position degree : 78.0  
tolerance degree :  $\pm$  4.0

Setting point w/out bumper spring

Rated speed rpm : 300  
rack travel mm : 5.90

Testing:

Rated speed rpm : 300  
rack travel mm : 6.40  
Tolerance mm :  $\pm$  0.10

rack travel mm : 2.00  
Rated speed rpm : 450  
Tolerance 1/min :  $\pm$  30

---

TORQUE CONTROL

Rated speed rpm : 1150  
rack travel mm : 12.60  
Tolerance mm :  $\pm$  0.05

Rated speed rpm : 800  
rack travel mm : 12.60  
Tolerance mm :  $\pm$  0.10

---

ANEROID/ALTITUDE  
COMPENSATOR TEST

SETTING

Rated speed rpm : 600  
Pressure hPa : 1250  
rack travel mm : 12.60  
Tolerance mm :  $\pm 0.05$

MEASUREMENT

Pressure hPa : -  
Rated speed rpm : 600  
rack travel mm : 8.60  
Tolerance mm :  $\pm 0.10$

Rated speed rpm : 600

Pressure hPa : 670  
rack travel mm : 11.40  
Tolerance mm :  $\pm 0.20$

Pressure hPa : 450  
rack travel mm : 9.60  
Tolerance mm :  $\pm 0.05$

---

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure  
hPa : -  
Rated speed rpm : 800  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 261.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm 3.0$   
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm 6.0$   
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

Aneroid pressure  
hPa : -  
Rated speed rpm : 500  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 131.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm 1.0$   
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm 4.0$   
Spreed

Tolerance  
cm<sup>3</sup>/1000 strokes : 6.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

---

BREAKAWAY

Rack travel in mm : 11.60  
Rated speed rpm : 1193  
Tolerance 1/min :  $\pm 5$

---

STARTING FUEL DELIVERY

Rated speed rpm : 100  
rack travel mm : 16.20  
Tolerance mm :  $\pm 0.20$   
Del. quantity  
cm<sup>3</sup>/1000 strokes : 347.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm 14.0$   
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm 20.0$

---

LOW IDLE

Rated speed rpm : 300  
rack travel mm : 6.40  
Tolerance mm :  $\pm 0.20$   
Del. quantity  
cm<sup>3</sup>/1000 strokes : 38.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm 3.0$   
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm 6.0$   
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

---

End of test specification sheet

# BOSCH INJ. PUMP TEST SPECIFICATIONS

## Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 29.09.95  
Test oil : ISO 4113

Combination No. : 0 402 646 652

Injection pump  
Pump designation : PE6P130A720RS7137  
: -10  
EP type number : 0 412 636 832

Governor  
Governor design. : RQ750PA865-3  
Governor no. : 0 421 801 751

Cust. part No. : 866371 P03 v. 6/94

## Customer-spec. information

Customer : PENTA  
Motor : TWD 1630 G  
Power KW : 392.0

## TEST BENCH REQUIREMENTS

Inlet Line : 4.2

Vibration  
damper  
(RoBo diaphragm) : 3.1

Test oil inlet  
temp. °C : 40  
Tolerance °C : ± 2.0

Overflow valve : 1 417 413 010

Inlet press. bar : 1.5

Test nozzle holde  
assembly : 1 688 901 019

Opening pressure  
bar : 208.5  
Tolerance bar : ± 1.5

Test lines : 1 680 750 075

Outside diameter : 8.0

x inside diameter : 3.0  
x length mm : 1000

## REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

## BEGINNING OF DELIVERY

Test pressure bar : 26.0  
Tolerance bar : ± 1.0

Prestroke mm : 3.65  
Tolerance mm : ± 0.05

test only : ± 0.10

Rack travel in mm : 10.50  
Tolerance mm : ± 1.50

Firing order : 1- 5- 3- 6- 2-  
: 4

Phasing : 0-60-120-180-240  
: -300  
Tolerance : ± 0.30  
Check  
tolerance °NW : ± 0.75

Start of delivery mark

Barrel no. : 1

## BASIC SETTING

Rated speed rpm : 700

Rack travel in mm : 14.25  
Tolerance mm : ± 0.05

Del. quantity  
cm<sup>3</sup>/1000 strokes : 450.0

Tolerance  
cm<sup>3</sup>/1000 strokes : +- 1.5

Check tolerance  
cm<sup>3</sup>/1000S. : +- 5.0

Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 7.0

Check tolerance  
cm<sup>3</sup>/1000S. : 11.0

(B) SETTING OF INJECTION PUMP  
WITH GOVERNOR

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 700  
Aneroid pressure  
hPa : -  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 450.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : +- 1.5  
Check tolerance  
cm<sup>3</sup>/1000S. : +- 5.0  
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 7.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 11.0

CONTROL LEVER

control lever  
position degree : 29.0  
tolerance degree : +- 4.0

control lever  
position degree : 90.0  
tolerance degree : +- 4.0

RATED SPEED

rack travel mm : 13.25  
Rated speed rpm : 751  
Tolerance 1/min : +- 3

rack travel mm : 4.00  
Rated speed rpm : 789  
Tolerance 1/min : +- 7

rack travel mm : 0.50  
Tolerance mm : +- 0.50

Rated speed rpm : 850

Rated speed rpm : 748  
rack travel mm : 13.25

Rated speed rpm : 787  
Tolerance 1/min : +- 5  
rack travel mm : 4.00

rack travel mm : 0.50  
Tolerance mm : +- 0.50  
Rated speed rpm : 850

Rated speed rpm : 749  
rack travel mm : 13.25

Rated speed rpm : 788  
Tolerance 1/min : +- 5  
rack travel mm : 4.00

rack travel mm : 0.50  
Tolerance mm : +- 0.50  
Rated speed rpm : 850

Rated speed rpm : 750  
rack travel mm : 13.25

Rated speed rpm : 789  
Tolerance 1/min : +- 5  
rack travel mm : 4.00

rack travel mm : 0.50  
Tolerance mm : +- 0.50  
Rated speed rpm : 850

Rated speed rpm : 751  
rack travel mm : 13.25

Rated speed rpm : 790  
Tolerance 1/min : +- 5  
rack travel mm : 4.00

rack travel mm : 0.50  
Tolerance mm : +- 0.50  
Rated speed rpm : 850

Rated speed rpm : 752  
rack travel mm : 13.25

Rated speed rpm : 791  
Tolerance 1/min : +- 5  
rack travel mm : 4.00

rack travel mm : 0.50  
Tolerance mm : +- 0.50  
Rated speed rpm : 850

Rated speed rpm : 753



rack travel mm : 13.25

Rated speed rpm : 792

Tolerance 1/min :  $\pm$  5

rack travel mm : 4.00

rack travel mm : 0.50

Tolerance mm :  $\pm$  0.50

Rated speed rpm : 850

---

#### TORQUE CONTROL

Rated speed rpm : 700

rack travel mm : 14.25

Tolerance mm :  $\pm$  0.05

---

#### BREAKAWAY

Rack travel in mm : 13.25

Rated speed rpm : 751

Tolerance 1/min :  $\pm$  3

---

End of test specification sheet

# BOSCH INJ. PUMP TEST SPECIFICATIONS

## Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 13.10.95  
Test oil : ISO 4113  
Combination No. : 0 401 848 829  
Injection pump  
Pump designation : PE8P110A320LS3865  
EP type number : 0 411 818 728  
Governor  
Governor design. : RQ250/1150PA1250  
Governor no. : 0 421 801 796

Cust. part No. :

Customer-spec. information  
Customer : DAEWOO  
Motor : V2-8NA

## TEST BENCH REQUIREMENTS

Inlet line : 3.1  
Test oil inlet  
temp. °C : 40  
Tolerance °C : ± 2.0  
Overflow valve : 1 417 413 025  
Inlet press. bar : 1.5  
Tolerance bar : ± 0.1  
Test nozzle holder  
assembly : 1 688 901 101  
Opening pressure  
bar : 208.5  
Tolerance bar : ± 1.5  
Test lines : 1 680 750 008  
Outside diameter : 6.0

x inside diameter : 2.0  
x length mm : 600

## REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

## BEGINNING OF DELIVERY

Test pressure bar : 26.0  
Tolerance bar : ± 1.0  
Prestroke mm : 4.00  
Tolerance mm : ± 0.05  
test only : ± 0.10  
Rack travel in mm : 10.50  
Tolerance mm : ± 1.50  
Firing order : 8- 7- 2- 6- 3  
                  : - 5- 4- 1  
Phasing : 0-45-90-135-180  
          : -225-270-315  
Tolerance : ± 0.30  
Check  
tolerance °NW : ± 0.50  
Start of delivery mark  
Barrel no. : 8

## BASIC SETTING

Rated speed rpm : 1150  
Rack travel in mm : 11.80  
Tolerance mm : ± 0.05  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 126.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 1.0  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 4.0

---

Spread  
Tolerance  
cm<sup>3</sup>/1000 strokes : 6.0

---

Check tolerance  
cm<sup>3</sup>/1000S. : 10.0

Rated speed rpm : 250

Rack travel in mm : 8.10  
Tolerance mm : ± 0.30

Del. quantity  
cm<sup>3</sup>/1000 strokes : 25.0  
Tolerance

cm<sup>3</sup>/1000 strokes : ± 3.0  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 6.0

Spread  
Tolerance  
cm<sup>3</sup>/1000 strokes : 6.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 10.0

(B) SETTING OF INJECTION PUMP  
WITH GOVERNOR

---

GUIDE SLEEVE TRAVEL

Rated speed rpm : 250  
guide sleeve  
travel mm : 1.59  
Tolerance mm : ± 0.20

Rated speed rpm : 1205  
guide sleeve  
travel mm : 7.34  
Tolerance mm : ± 0.15

Rated speed rpm : 1150  
guide sleeve  
travel mm : 7.00  
Tolerance mm : ± 0.10

Rated speed rpm : 414  
guide sleeve  
travel mm : 5.47  
Tolerance mm : ± 0.10

Rated speed rpm : 510  
guide sleeve  
travel mm : 7.00  
Tolerance mm : ± 0.10

Rated speed rpm : 1340  
guide sleeve  
travel mm : 11.50  
Tolerance mm : ± 0.50

---

GUIDE SLEEVE POSITION

Rated speed rpm : 700

Rack travel in mm : 15.50  
Tolerance mm : ± 1.30

---

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1150  
Aneroid pressure  
hPa : -

Del. quantity  
cm<sup>3</sup>/1000 strokes : 126.0  
Tolerance

cm<sup>3</sup>/1000 strokes : ± 1.0  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 4.0

Spread  
Tolerance  
cm<sup>3</sup>/1000 strokes : 6.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 10.0

---

CONTROL LEVER

control lever  
position degree : 36.0  
tolerance degree : ± 4.0

control lever  
position degree : 98.0  
tolerance degree : ± 4.0

RATED SPEED

rack travel mm : 10.80  
Rated speed rpm : 1203  
Tolerance 1/min : ± 5

rack travel mm : 4.00  
Rated speed rpm : 1260  
Tolerance 1/min : ± 15

rack travel mm : 0.50  
Tolerance mm : ± 0.50  
Rated speed rpm : 1350

---

LOW IDLE

control lever  
position degree : 77.0

tolerance degree :  $\pm$  4.0

control lever

position degree : 14.0

tolerance degree :  $\pm$  4.0

#### Testing:

Rated speed rpm : 250

rack travel mm : 8.10

Tolerance mm :  $\pm$  0.10

rack travel mm : 2.00

Rated speed rpm : 400

Tolerance 1/min :  $\pm$  20

Rated speed rpm : 150

CRT mm min. :  $>$  9.90

---

#### TORQUE CONTROL

Rated speed rpm : 1150

rack travel mm : 11.80

Tolerance mm :  $\pm$  0.05

Rated speed rpm : 650

rack travel mm : 11.80

Tolerance mm :  $\pm$  0.10

---

#### START CUT-OUT

Rated speed rpm :  $<$  170

Check

speed 1/min :  $<$  190

---

#### FUEL DELIVERY CHARACTERISTICS

Aneroid pressure

hPa : -

Rated speed rpm : 650

Del. quantity

cm<sup>3</sup>/1000 strokes : 127.0

Tolerance

cm<sup>3</sup>/1000 strokes :  $\pm$  3.0

Check tolerance

cm<sup>3</sup>/1000S. :  $\pm$  6.0

---

#### BREAKAWAY

Rack travel in mm : 10.80

Rated speed rpm : 1203

Tolerance 1/min :  $\pm$  5

---

#### STARTING FUEL DELIVERY

Rated speed rpm : 100

Del. quantity

cm<sup>3</sup>/1000 strokes : 135.0

Tolerance

cm<sup>3</sup>/1000 strokes :  $\pm$  20.0

Check tolerance

cm<sup>3</sup>/1000S. :  $\pm$  24.0

---

#### LOW IDLE

Rated speed rpm : 250

rack travel mm : 8.10

Tolerance mm :  $\pm$  0.30

Del. quantity

cm<sup>3</sup>/1000 strokes : 25.0

Tolerance

cm<sup>3</sup>/1000 strokes :  $\pm$  3.0

Check tolerance

cm<sup>3</sup>/1000S. :  $\pm$  6.0

Speed

Tolerance

cm<sup>3</sup>/1000 strokes : 6.0

Check tolerance

cm<sup>3</sup>/1000S. : 10.0

---

End of test specification sheet

# BOSCH INJ. PUMP TEST SPECIFICATIONS

## Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 16.10.95

Test oil : ISO 4113

Combination No. : 0 401 876 345

## Injection pump

Pump designation : PE6P120A320RS3301

EP type number : 0 411 826 805

## Governor

Governer design. : RSV250...1100POA374

: -12

Governer no. : 0 421 833 375

Cust. part No. : 865409 P04 v. 6/95

## Customer-spec. information

Customer : PENTA

Motor : TAMO 102 D

## TEST BENCH REQUIREMENTS

Inlet Line : 3.2

Vibration  
damper

(RoBo diaphragm) : 4.1

Test oil inlet

temp. °C : 40

Tolerance °C : +- 2.0

Overflow valve : 2 417 413 077

Inlet press. bar : 1.5

Tolerance bar : +- 0.1

Test nozzle holde  
assembly

: 1 688 901 019

Opening pressure  
bar

: 208.5

Tolerance bar : +- 1.5

Test lines : 1 680 750 075

Outside diameter : 8.0

x inside diameter : 3.0

x length mm : 1000

## REMARKS

## (A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values \_\_\_\_\_

## BEGINNING OF DELIVERY

Test pressure bar : 26.0

Tolerance bar : +- 1.0

Prestroke mm : 3.45

Tolerance mm : +- 0.05

test only : +- 0.10

Rack travel in mm : 10.50

Tolerance mm : +- 1.50

Firing order : 1- 5- 3- 6- 2-  
: 4

Phasing : 0-60-120-180-240  
: -300

Tolerance : +- 0.30

Check  
tolerance °NW : +- 0.75

Start of delivery mark

Barrel no. : 1

## BASIC SETTING

Rated speed rpm : 1100

Rack travel in mm : 13.30

Tolerance mm : +- 0.05

Del. quantity  
cm<sup>3</sup>/1000 strokes : 280.0

|                               |         |
|-------------------------------|---------|
| Tolerance                     |         |
| cm <sup>3</sup> /1000 strokes | : ± 1.0 |
| Check tolerance               |         |
| cm <sup>3</sup> /1000S.       | : ± 4.0 |
| Spread                        |         |
| Tolerance                     |         |
| cm <sup>3</sup> /1000 strokes | : 7.0   |
| Check tolerance               |         |
| cm <sup>3</sup> /1000S.       | : 11.0  |
| Del. quantity                 |         |
| cm <sup>3</sup> /1000 strokes | : 24.0  |
| Tolerance                     |         |
| cm <sup>3</sup> /1000 strokes | : ± 2.5 |
| Check tolerance               |         |
| cm <sup>3</sup> /1000S.       | : ± 5.0 |
| Spread                        |         |
| Tolerance                     |         |
| cm <sup>3</sup> /1000 strokes | : 3.0   |
| Check tolerance               |         |
| cm <sup>3</sup> /1000S.       | : 6.0   |

#### (B) SETTING OF INJECTION PUMP WITH GOVERNOR

##### GUIDE SLEEVE POSITION

|                   |          |
|-------------------|----------|
| Rated speed rpm   | : 800    |
| Rack travel in mm | : 0.85   |
| Tolerance mm      | : ± 0.55 |
| governor spring   |          |
| pre-tension       |          |
| click setting x   | : 2.25   |

##### FULL LOAD DELIVERY AT FULL LOAD STOP

|                               |         |
|-------------------------------|---------|
| Rated speed rpm               | : 1100  |
| Aneroid pressure              |         |
| hPa                           | : 1500  |
| Del. quantity                 |         |
| cm <sup>3</sup> /1000 strokes | : 280.0 |
| Tolerance                     |         |
| cm <sup>3</sup> /1000 strokes | : ± 1.0 |
| Check tolerance               |         |
| cm <sup>3</sup> /1000S.       | : ± 4.0 |
| Spread                        |         |
| Tolerance                     |         |
| cm <sup>3</sup> /1000 strokes | : 7.0   |
| Check tolerance               |         |
| cm <sup>3</sup> /1000S.       | : 11.0  |

##### CONTROL LEVER

|                  |         |
|------------------|---------|
| control lever    |         |
| position degree  | : 44.0  |
| tolerance degree | : ± 4.0 |

|                  |         |
|------------------|---------|
| control lever    |         |
| position degree  | : 94.0  |
| tolerance degree | : ± 4.0 |

##### RATED SPEED

|                 |         |
|-----------------|---------|
| rack travel mm  | : 12.30 |
| Rated speed rpm | : 1145  |
| Tolerance 1/min | : ± 5   |

|                 |        |
|-----------------|--------|
| rack travel mm  | : 4.00 |
| Rated speed rpm | : 1230 |
| Tolerance 1/min | : ± 15 |

|                 |          |
|-----------------|----------|
| rack travel mm  | : 0.85   |
| Tolerance mm    | : ± 0.55 |
| Rated speed rpm | : 1350   |

|                 |        |
|-----------------|--------|
| rack travel mm  | : 4.00 |
| Rated speed rpm | : 1240 |

##### LOW IDLE

|                  |         |
|------------------|---------|
| control lever    |         |
| position degree  | : 69.0  |
| tolerance degree | : ± 4.0 |

|                  |         |
|------------------|---------|
| control lever    |         |
| position degree  | : 19.0  |
| tolerance degree | : ± 4.0 |

##### Setting point w/out bumper spring

|                 |        |
|-----------------|--------|
| Rated speed rpm | : 250  |
| rack travel mm  | : 5.70 |

##### Testing:

|                 |          |
|-----------------|----------|
| Rated speed rpm | : 250    |
| rack travel mm  | : 6.20   |
| Tolerance mm    | : ± 0.10 |

|                 |        |
|-----------------|--------|
| rack travel mm  | : 2.00 |
| Rated speed rpm | : 370  |
| Tolerance 1/min | : ± 30 |

##### TORQUE CONTROL

Rated speed rpm : 1100  
rack travel mm : 13.30  
Tolerance mm :  $\pm$  0.05

Rated speed rpm : 700  
rack travel mm : 13.30  
Tolerance mm :  $\pm$  0.05

---

ANEROID/ALTITUDE  
COMPENSATOR TEST

SETTING

Rated speed rpm : 500  
Pressure hPa : 1500  
rack travel mm : 13.30  
Tolerance mm :  $\pm$  0.05

MEASUREMENT

Pressure hPa : -  
Rated speed rpm : 500  
rack travel mm : 8.10  
Tolerance mm :  $\pm$  0.10

Rated speed rpm : 500

Pressure hPa : 1100  
rack travel mm : 4.70  
Tolerance mm :  $\pm$  0.15

Pressure hPa : 150  
rack travel mm : 0.25  
Tolerance mm :  $\pm$  0.05

---

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure  
hPa : 1500  
Rated speed rpm : 700  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 303.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  3.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  6.0  
Speed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

Aneroid pressure  
hPa : -  
Rated speed rpm : 700

Del. quantity  
cm<sup>3</sup>/1000 strokes : 148.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  1.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  4.0

---

BREAKAWAY

Rack travel in mm : 12.30  
Rated speed rpm : 1145  
Tolerance 1/min :  $\pm$  5

---

STARTING FUEL DELIVERY

Rated speed rpm : 100  
rack travel mm : 15.00  
Tolerance mm :  $\pm$  0.50

---

LOW IDLE

Del. quantity  
cm<sup>3</sup>/1000 strokes : 24.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  2.5  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  5.0  
Speed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 3.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 6.0

---

End of test specification sheet

# BOSCH INJ. PUMP TEST SPECIFICATIONS

## Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 18.10.95  
Test oil : ISO 4113

Combination No. : 0 401 876 346

Injection pump  
Pump designation : PE6P110A320RS497  
EP type number : 0 411 816 165

Governor  
Governor design. : RSV250...1200P1A374  
: -14  
Governor no. : 0 421 833 464

Cust. part No. : 866537-P03 v. 12/94

Customer-spec. information  
Customer : PENTA  
Motor : TID 72A

## TEST BENCH REQUIREMENTS

Inlet line : 3.1

Vibration  
damper  
(RoBo diaphragm) : 4.2

Test oil inlet  
temp. °C : 40  
Tolerance °C : ± 2.0

Overflow valve : 1 457 413 010

Inlet press. bar : 1.5  
Tolerance bar : ± 0.1

Test nozzle holde  
assembly : 0 681 343 009

Opening pressure  
bar : 173.5  
Tolerance bar : ± 1.5

Test lines : 1 680 750 089

Outside diameter : 8.0

x inside diameter : 3.0  
x length mm : 600

## REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

## BEGINNING OF DELIVERY

Test pressure bar : 26.0  
Tolerance bar : ± 1.0

Prestroke mm : 3.05  
Tolerance mm : ± 0.05

test only : ± 0.10

Rack travel in mm : 10.50  
Tolerance mm : ± 1.50

Firing order : 1- 5- 3- 6- 2-  
: 4

Phasing : 0-60-120-180-240  
: -300

Tolerance : ± 0.30

Check  
tolerance °NW : ± 0.75

Start of delivery mark

Barrel no. : 1

## BASIC SETTING

Rated speed rpm : 700

Rack travel in mm : 12.85  
Tolerance mm : ± 0.05

Del. quantity  
cm<sup>3</sup>/1000 strokes : 139.0



---

|                  |         |
|------------------|---------|
| Tolerance        |         |
| cm3/1000 strokes | : + 1.0 |

---

|                 |         |
|-----------------|---------|
| Check tolerance |         |
| cm3/1000S.      | : + 4.0 |

---

|                  |       |
|------------------|-------|
| Spreed           |       |
| Tolerance        |       |
| cm3/1000 strokes | : 4.0 |

---

|                 |       |
|-----------------|-------|
| Check tolerance |       |
| cm3/1000S.      | : 7.5 |

---

#### (B) SETTING OF INJECTION PUMP WITH GOVERNOR

---

##### GUIDE SLEEVE POSITION

|                 |        |
|-----------------|--------|
| governor spring |        |
| pre-tension     |        |
| click setting x | : 5.50 |

---

---

##### FULL LOAD DELIVERY AT FULL LOAD STOP

|                  |         |
|------------------|---------|
| Rated speed rpm  | : 700   |
| Aneroid pressure |         |
| hPa              | : 1500  |
| Del. quantity    |         |
| cm3/1000 strokes | : 139.0 |
| Tolerance        |         |
| cm3/1000 strokes | : + 1.0 |
| Check tolerance  |         |
| cm3/1000S.       | : + 4.0 |
| Spreed           |         |
| Tolerance        |         |
| cm3/1000 strokes | : 4.0   |
| Check tolerance  |         |
| cm3/1000S.       | : 7.5   |

##### RATED SPEED

|                 |          |
|-----------------|----------|
| rack travel mm  | : 11.85  |
| Rated speed rpm | : 1215   |
| Tolerance 1/min | : + 5    |
| rack travel mm  | : 0.85   |
| Tolerance mm    | : + 0.55 |
| Rated speed rpm | : 1400   |

---

##### LOW IDLE

Setting point w/out bumper spring

K17

|                 |        |
|-----------------|--------|
| Rated speed rpm | : 250  |
| rack travel mm  | : 5.20 |

##### Testing:

|                 |          |
|-----------------|----------|
| Rated speed rpm | : 250    |
| rack travel mm  | : 4.70   |
| Tolerance mm    | : + 0.10 |

---

#### ANEROID/ALTITUDE COMPENSATOR TEST

##### SETTING

|                 |          |
|-----------------|----------|
| Rated speed rpm | : 500    |
| Pressure hPa    | : 1500   |
| rack travel mm  | : 12.85  |
| Tolerance mm    | : + 0.05 |

##### MEASUREMENT

|                 |          |
|-----------------|----------|
| Pressure hPa    | : -      |
| Rated speed rpm | : 500    |
| rack travel mm  | : 9.40   |
| Tolerance mm    | : + 0.10 |

|                 |       |
|-----------------|-------|
| Rated speed rpm | : 500 |
|-----------------|-------|

|                |          |
|----------------|----------|
| Pressure hPa   | : 910    |
| rack travel mm | : 3.10   |
| Tolerance mm   | : + 0.10 |

|                |          |
|----------------|----------|
| Pressure hPa   | : 310    |
| rack travel mm | : 0.25   |
| Tolerance mm   | : + 0.05 |

---

##### FUEL DELIVERY CHARACTERISTICS

|                  |         |
|------------------|---------|
| Aneroid pressure |         |
| hPa              | : -     |
| Rated speed rpm  | : 700   |
| Del. quantity    |         |
| cm3/1000 strokes | : 77.0  |
| Tolerance        |         |
| cm3/1000 strokes | : + 1.0 |
| Check tolerance  |         |
| cm3/1000S.       | : + 4.0 |

---

##### BREAKAWAY

|                   |         |
|-------------------|---------|
| Rack travel in mm | : 11.85 |
| Rated speed rpm   | : 1215  |

Tolerance 1/min :  $\pm$  5

---

STARTING FUEL DELIVERY

Rated speed rpm : 100  
rack travel mm : 20.50  
Tolerance mm :  $\pm$  0.50  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 200.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  15.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  19.0

---

End of test specification sheet

# BOSCH INJ. PUMP TEST SPECIFICATIONS

## Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 16.10.95  
Test oil : ISO 4113

Combination No. : 0 401 876 762

Injection pump  
Pump designation : PE6P120A320RS3206  
EP type number : 0 411 826 773

Governor  
Governor design. : RSV250...900P4A374  
: -7  
Governor no. : 0 421 833 284

Cust. part No. : 863094 P04 v. 6/95

Customer-spec. information  
Customer : VOLVO-PENTA  
Motor : TMD 122 A (HD)  
Power KW : 236.0

## TEST BENCH REQUIREMENTS

Inlet line : 3.2

Vibration  
damper  
(RoBo diaphragm) : 4.1

Test oil inlet  
temp. °C : 40  
Tolerance °C : ± 2.0

Overflow valve : 2 417 413 077

Inlet press. bar : 1.5  
Tolerance bar : ± 0.1

Test nozzle holde  
assembly : 1 688 901 019

Opening pressure  
bar : 208.5  
Tolerance bar : ± 1.5

K19

Test lines : 1 680 750 075

Outside diameter : 8.0

x inside diameter : 3.0  
x length mm : 1000

## REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

## BEGINNING OF DELIVERY

Test pressure bar : 26.0  
Tolerance bar : ± 1.0

Prestroke mm : 3.55  
Tolerance mm : ± 0.05

test only : ± 0.10

Rack travel in mm : 8.50  
Tolerance mm : ± 0.50

Firing order : 1- 5- 3- 6- 2-  
: 4

Phasing : 0-60-120-180-240  
: -300  
Tolerance : ± 0.30  
Check  
tolerance °NW : ± 0.75

Start of delivery mark

Barrel no. : 1

## BASIC SETTING

Rated speed rpm : 700

Rack travel in mm : 9.95  
Tolerance mm : ± 0.05

Del. quantity  
cm<sup>3</sup>/1000 strokes : 213.5

---

Tolerance  
cm<sup>3</sup>/1000 strokes : + 1.0

---

Check tolerance  
cm<sup>3</sup>/1000S. : + 4.0

---

Spread  
Tolerance  
cm<sup>3</sup>/1000 strokes : 5.0

---

Check tolerance  
cm<sup>3</sup>/1000S. : 9.0

(B) SETTING OF INJECTION PUMP  
WITH GOVERNOR

---

GUIDE SLEEVE POSITION

Rated speed rpm : 800

Rack travel in mm : 0.50  
Tolerance mm : + 0.20

governor spring  
pre-tension  
click setting x : 6.00

---

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 700  
Aneroid pressure  
hPa : 1000  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 213.5  
Tolerance  
cm<sup>3</sup>/1000 strokes : + 1.0  
Check tolerance  
cm<sup>3</sup>/1000S. : + 4.0  
Spread  
Tolerance  
cm<sup>3</sup>/1000 strokes : 5.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 9.0

---

CONTROL LEVER

control lever  
position degree : 57.0  
tolerance degree : + 4.0

control lever  
position degree : 107.0  
tolerance degree : + 4.0

K20

RATED SPEED

rack travel mm : 8.95  
Rated speed rpm : 930  
Tolerance 1/min : + 5

rack travel mm : 4.00  
Rated speed rpm : 980  
Tolerance 1/min : + 15

rack travel mm : 0.85  
Tolerance mm : + 0.55  
Rated speed rpm : 1130

---

LOW IDLE

control lever  
position degree : 79.0  
tolerance degree : + 4.0

control lever  
position degree : 29.0  
tolerance degree : + 4.0

Setting point w/out bumper spring

Rated speed rpm : 250  
rack travel mm : 4.60

Testing:

Rated speed rpm : 250  
rack travel mm : 5.10  
Tolerance mm : + 0.10

rack travel mm : 2.00  
Rated speed rpm : 410  
Tolerance 1/min : + 30

---

ANEROID/ALTITUDE  
COMPENSATOR TEST

SETTING

Rated speed rpm : 700  
Pressure hPa : 1000  
rack travel mm : 9.95  
Tolerance mm : + 0.05

MEASUREMENT

Pressure hPa : -  
Rated speed rpm : 700

rack travel mm : 8.70  
Tolerance mm :  $\pm$  0.10

Rated speed rpm : 700

Pressure hPa : 570  
rack travel mm : 0.80  
Tolerance mm :  $\pm$  0.15

Pressure hPa : 460  
rack travel mm : 0.25  
Tolerance mm :  $\pm$  0.05

---

#### FUEL DELIVERY CHARACTERISTICS

Aneroid pressure  
hPa : -  
Rated speed rpm : 700  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 178.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  1.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  4.0

---

#### BREAKAWAY

Rack travel in mm : 8.95  
Rated speed rpm : 930  
Tolerance 1/min :  $\pm$  5

---

#### STARTING FUEL DELIVERY

Rated speed rpm : 100  
rack travel mm : 8.50  
Tolerance mm :  $\pm$  0.50

---

End of test specification sheet

# BOSCH INJ. PUMP TEST SPECIFICATIONS

## Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 16.10.95  
Test oil : ISO 4113

Combination No. : 0 401 876 808

Injection pump  
Pump designation : PE6P120A320RS3355  
EP type number : 0 411 826 814

Governor  
Governor design. : RSV300...1100P1A604  
Governor no. : 0 421 833 485

Cust. part No. : 3825516 P02 v. 5/95

Customer-spec. information  
Customer : PENTA  
Motor : TD1030ME  
Power KW : 190.0

## TEST BENCH REQUIREMENTS

Inlet line : 3.1

Test oil inlet  
temp. °C : 40  
Tolerance °C : ± 2.0

Overflow valve : 2 417 413 077

Inlet press. bar : 1.5  
Tolerance bar : ± 0.1

Overflow quantity  
min. l/h : 85  
Tolerance l/h : ± 10.0

Test nozzle holde  
assembly : 1 688 901 101

Opening pressure  
bar : 208.5  
Tolerance bar : ± 1.5

Test Lines : 1 680 750 008

Outside diameter : 6.0

x inside diameter : 2.0  
x length mm : 600

## REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

## BEGINNING OF DELIVERY

Test pressure bar : 26.0  
Tolerance bar : ± 1.0

Prestroke mm : 3.45  
Tolerance mm : ± 0.05

test only : ± 0.10

Rack travel in mm : 9.90  
Tolerance mm : ± 0.50

Firing order : 1- 5- 3- 6- 2-  
: 4

Phasing : 0-60-120-180-240  
: -300

Tolerance : ± 0.30  
Check  
tolerance °NW : ± 0.75

Start of delivery mark

Barrel no. : 1

## BASIC SETTING

Rated speed rpm : 1100

Rack travel in mm : 12.50  
Tolerance mm : ± 0.05

Del. quantity  
cm<sup>3</sup>/1000 strokes : 156.0

Tolerance  
cm<sup>3</sup>/1000 strokes : +- 1.0

Check tolerance  
cm<sup>3</sup>/1000S. : +- 4.0

Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 7.0

Check tolerance  
cm<sup>3</sup>/1000S. : 11.0

Rated speed rpm : 300

Rack travel in mm : 4.70  
Tolerance mm : +- 0.20

Del. quantity  
cm<sup>3</sup>/1000 strokes : 23.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : +- 2.5  
Check tolerance  
cm<sup>3</sup>/1000S. : +- 5.0

Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 3.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 6.0

#### (B) SETTING OF INJECTION PUMP WITH GOVERNOR

##### GUIDE SLEEVE POSITION

Rated speed rpm : 800

Rack travel in mm : 0.85  
Tolerance mm : +- 0.55

governor spring  
pre-tension  
click setting x : 4.75

##### FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1100  
Aneroid pressure  
hPa : 1500  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 156.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : +- 1.0  
Check tolerance  
cm<sup>3</sup>/1000S. : +- 4.0  
Spreed

Tolerance  
cm<sup>3</sup>/1000 strokes : 7.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 11.0

##### CONTROL LEVER

control lever  
position degree : 62.0  
tolerance degree : +- 4.0

control lever  
position degree : 112.0  
tolerance degree : +- 4.0

##### RATED SPEED

rack travel mm : 11.50  
Rated speed rpm : 1135  
Tolerance 1/min : +- 5

rack travel mm : 4.00  
Rated speed rpm : 1190  
Tolerance 1/min : +- 15

rack travel mm : 0.85  
Tolerance mm : +- 0.55  
Rated speed rpm : 1300

rack travel mm : 4.00  
Rated speed rpm : 1195

##### LOW IDLE

control lever  
position degree : 76.0  
tolerance degree : +- 4.0

control lever  
position degree : 26.0  
tolerance degree : +- 4.0

##### Setting point w/out bumper spring

Rated speed rpm : 300  
rack travel mm : 4.20

##### Testing:

Rated speed rpm : 300  
rack travel mm : 4.70  
Tolerance mm : +- 0.10

rack travel mm : 2.00  
Rated speed rpm : 380

Tolerance 1/min : + 30

---

#### TORQUE CONTROL

Rated speed rpm : 1100  
rack travel mm : 12.50  
Tolerance mm : + 0.05

Rated speed rpm : 700  
rack travel mm : 12.50  
Tolerance mm : + 0.10

---

#### ANEROID/ALTITUDE COMPENSATOR TEST

##### SETTING

Rated speed rpm : 500  
Pressure hPa : 1500  
rack travel mm : 12.50  
Tolerance mm : + 0.05

##### MEASUREMENT

Pressure hPa : -  
Rated speed rpm : 500  
rack travel mm : 9.55  
Tolerance mm : + 0.10

Rated speed rpm : 500

Pressure hPa : 555  
rack travel mm : 2.30  
Tolerance mm : + 0.15

Pressure hPa : 140  
rack travel mm : 0.25  
Tolerance mm : + 0.05

---

#### FUEL DELIVERY CHARACTERISTICS

Aneroid pressure  
hPa : 1500  
Rated speed rpm : 700  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 179.5  
Tolerance  
cm<sup>3</sup>/1000 strokes : + 3.0  
Check tolerance  
cm<sup>3</sup>/1000S. : + 6.0  
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 7.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 11.0

Aneroid pressure  
hPa : -  
Rated speed rpm : 500  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 127.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : + 1.0  
Check tolerance  
cm<sup>3</sup>/1000S. : + 4.0

---

#### BREAKAWAY

Rack travel in mm : 11.50  
Rated speed rpm : 1135  
Tolerance 1/min : + 5

---

#### LOW IDLE

Rated speed rpm : 300  
rack travel mm : 4.70  
Tolerance mm : + 0.20  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 23.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : + 2.5  
Check tolerance  
cm<sup>3</sup>/1000S. : + 5.0  
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 3.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 6.0

---

End of test specification sheet



# BOSCH INJ. PUMP TEST SPECIFICATIONS

## Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 11.10.95  
Test oil : ISO 4113

Combination No. : 0 401 876 810

Injection pump  
Pump designation : PE6P120A320RS3359  
EP type number : 0 411 826 815

Governor  
Governor design. : RSV325...1200P1A615  
Governor no. : 0 421 833 503

Cust. part No. : 3825515 P01 v. 5/95

Customer-spec. information  
Customer : PENTA  
Motor : TD 730ME  
Power KW : 150.0

## TEST BENCH REQUIREMENTS

Inlet Line : 3.1

Test oil inlet  
temp. °C : 40  
Tolerance °C : ± 2.0

Overflow valve : 2 417 413 077

Inlet press. bar : 1.5  
Tolerance bar : ± 0.1

Test nozzle holde  
assembly : 1 688 901 101

Opening pressure  
bar : 208.5  
Tolerance bar : ± 1.5

Test lines : 1 680 750 008

Outside diameter : 6.0

x inside diameter : 2.0  
x length mm : 600

## REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

## BEGINNING OF DELIVERY

Test pressure bar : 26.0  
Tolerance bar : ± 1.0

Prestroke mm : 3.35  
Tolerance mm : ± 0.05

test only : ± 0.10

Rack travel in mm : 9.00  
Tolerance mm : ± 0.50

Firing order : 1- 5- 3- 6- 2-  
: 4

Phasing : 0-60-120-180-240  
: -300

Tolerance : ± 0.30  
Check  
tolerance °NW : ± 0.75

Start of delivery mark

Barrel no. : 1

## BASIC SETTING

Rated speed rpm : 1200

Rack travel in mm : 11.10  
Tolerance mm : ± 0.05

Del. quantity  
cm<sup>3</sup>/1000 strokes : 130.0

Tolerance  
cm<sup>3</sup>/1000 strokes : ± 1.0

Check tolerance  
cm<sup>3</sup>/1000S. : ± 4.0

---

Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 7.0

---

Check tolerance  
cm<sup>3</sup>/1000S. : 11.0

Rated speed rpm : 325

Rack travel in mm : 4.40  
Tolerance mm : ± 0.20

Del. quantity  
cm<sup>3</sup>/1000 strokes : 30.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 2.5

Check tolerance  
cm<sup>3</sup>/1000S. : ± 5.0

Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 3.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 6.0

#### (B) SETTING OF INJECTION PUMP WITH GOVERNOR

---

##### GUIDE SLEEVE POSITION

Rated speed rpm : 800

Rack travel in mm : 0.85  
Tolerance mm : ± 0.55

governor spring  
pre-tension  
click setting x : 6.00

---

##### FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1200  
Aneroid pressure  
hPa : 1500  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 130.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 1.0  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 4.0  
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 7.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 11.0

---

##### CONTROL LEVER

control lever  
position degree : 68.0  
tolerance degree : ± 4.0

control lever  
position degree : 118.0  
tolerance degree : ± 4.0

##### RATED SPEED

rack travel mm : 10.10  
Rated speed rpm : 1235  
Tolerance 1/min : ± 5

rack travel mm : 4.00  
Rated speed rpm : 1280  
Tolerance 1/min : ± 15

rack travel mm : 0.85  
Tolerance mm : ± 0.55  
Rated speed rpm : 1400

---

##### LOW IDLE

control lever  
position degree : 79.0  
tolerance degree : ± 4.0

control lever  
position degree : 29.0  
tolerance degree : ± 4.0

##### Setting point w/out bumper spring

Rated speed rpm : 325  
rack travel mm : 3.90

##### Testing:

Rated speed rpm : 325  
rack travel mm : 4.40  
Tolerance mm : ± 0.10

rack travel mm : 2.00  
Rated speed rpm : 390  
Tolerance 1/min : ± 30

---

##### TORQUE CONTROL

Rated speed rpm : 1200  
rack travel mm : 11.10

Tolerance mm :  $\pm$  0.05  
Rated speed rpm : 700  
rack travel mm : 11.10  
Tolerance mm :  $\pm$  0.10

---

#### ANEROID/ALTITUDE COMPENSATOR TEST

##### SETTING

Rated speed rpm : 500  
Pressure hPa : 1500  
rack travel mm : 11.00  
Tolerance mm :  $\pm$  0.05

##### MEASUREMENT

Pressure hPa : -  
Rated speed rpm : 500  
rack travel mm : 8.80  
Tolerance mm :  $\pm$  0.10

Rated speed rpm : 500

Pressure hPa : 770  
rack travel mm : 1.85  
Tolerance mm :  $\pm$  0.15

Pressure hPa : 390  
rack travel mm : 0.25  
Tolerance mm :  $\pm$  0.05

---

#### FUEL DELIVERY CHARACTERISTICS

Aneroid pressure  
hPa : 1500  
Rated speed rpm : 700  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 150.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  3.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  6.0  
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 7.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 11.0

Aneroid pressure  
hPa : -  
Rated speed rpm : 500  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 89.0

Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  1.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  4.0

---

#### BREAKAWAY

Rack travel in mm : 10.10  
Rated speed rpm : 1235  
Tolerance 1/min :  $\pm$  5

---

#### LOW IDLE

Rated speed rpm : 325  
rack travel mm : 4.40  
Tolerance mm :  $\pm$  0.20  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 30.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  2.5  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  5.0  
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 3.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 6.0

---

End of test specification sheet

# BOSCH INJ. PUMP TEST SPECIFICATIONS

## Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 16.10.95  
Test oil : ISO 4113

Combination No. : 0 402 046 801

Injection pump  
Pump designation : PES6P110A720RS3104  
EP type number : 0 412 016 712

Governor  
Governor design. : RQV300...1150PA850  
: -2  
Governor no. : 0 421 813 718

Cust. part No. :

Customer-spec. information  
Customer : KHD  
Motor : BF6L513RC  
Power kW : 231.0

## TEST BENCH REQUIREMENTS

Inlet line : 4.1

Test oil inlet  
temp. °C : 40  
Tolerance °C : ± 2.0

Overflow valve : 1 417 413 025

Inlet press. bar : 1.5  
Tolerance bar : ± 0.1

Test nozzle holde  
assembly : 0 681 343 009

Opening pressure  
bar : 173.5  
Tolerance bar : ± 1.5

Test lines : 1 680 750 089

Outside diameter : 8.0  
x inside diameter : 3.0  
x length mm : 600

## REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

## BEGINNING OF DELIVERY

Test pressure bar : 26.0  
Tolerance bar : ± 1.0

Prestroke mm : 2.85  
Tolerance mm : ± 0.05

test only : ± 0.10

Rack travel in mm : 10.50  
Tolerance mm : ± 1.50

Firing order : 6- 2- 4- 1- 5-  
: 3

Phasing : 0-60-120-180-240  
: -300

Tolerance : ± 0.30  
Check  
tolerance °NW : ± 0.50

Start of delivery mark

Barrel no. : 6

## BASIC SETTING

Rated speed rpm : 1150

Rack travel in mm : 14.45  
Tolerance mm : ± 0.05

Del. quantity  
cm<sup>3</sup>/1000 strokes : 173.0

Tolerance  
cm<sup>3</sup>/1000 strokes : ± 1.0

Check tolerance  
cm<sup>3</sup>/1000S. : +- 4.0

---

Spread  
Tolerance  
cm<sup>3</sup>/1000 strokes : 4.0

---

Check tolerance  
cm<sup>3</sup>/1000S. : 7.5

Rated speed rpm : 300

Rack travel in mm : 7.80  
Tolerance mm : +- 0.20

Del. quantity  
cm<sup>3</sup>/1000 strokes : 19.0

Tolerance  
cm<sup>3</sup>/1000 strokes : +- 2.5

Check tolerance  
cm<sup>3</sup>/1000S. : +- 5.0

Spread  
Tolerance  
cm<sup>3</sup>/1000 strokes : 4.5

Check tolerance  
cm<sup>3</sup>/1000S. : 7.5

---

(B) SETTING OF INJECTION PUMP  
WITH GOVERNOR

---

GUIDE SLEEVE TRAVEL

Rated speed rpm : 300  
guide sleeve  
travel mm : 1.30  
Tolerance mm : +- 0.10

Rated speed rpm : 1195  
guide sleeve  
travel mm : 8.50  
Tolerance mm : +- 0.10

Rated speed rpm : 350  
guide sleeve  
travel mm : 2.20  
Tolerance mm : +- 0.30

Rated speed rpm : 650  
guide sleeve  
travel mm : 4.50  
Tolerance mm : +- 0.30

Rated speed rpm : 1320  
guide sleeve  
travel mm : 9.90  
Tolerance mm : +- 0.20

---

GUIDE SLEEVE POSITION

L01

Rated speed rpm : 1190

Rack travel in mm : 16.50  
Tolerance mm : +- 1.30

---

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1150  
Aneroid pressure  
hPa : 900

Del. quantity  
cm<sup>3</sup>/1000 strokes : 173.0

Tolerance  
cm<sup>3</sup>/1000 strokes : +- 1.0

Check tolerance  
cm<sup>3</sup>/1000S. : +- 4.0

Spread  
Tolerance  
cm<sup>3</sup>/1000 strokes : 4.0

Check tolerance  
cm<sup>3</sup>/1000S. : 7.5

---

CONTROL LEVER

control lever  
position degree : 56.0  
tolerance degree : +- 4.0

control lever  
position degree : 122.0  
tolerance degree : +- 4.0

RATED SPEED

rack travel mm : 13.40  
Rated speed rpm : 1195  
Tolerance 1/min : +- 5

rack travel mm : 4.00  
Rated speed rpm : 1320  
Tolerance 1/min : +- 15

rack travel mm : 0.50  
Tolerance mm : +- 0.50  
Rated speed rpm : 1450

---

LOW IDLE

control lever  
position degree : 86.0  
tolerance degree : +- 4.0

control lever  
position degree : 20.0  
tolerance degree :  $\pm$  4.0

#### Testing:

Rated speed rpm : 300  
rack travel mm : 7.80  
Tolerance mm :  $\pm$  0.10

Rated speed rpm : 100  
CRT mm min. :  $>$  9.30

Rated speed rpm : 395

#### TORQUE CONTROL

Dimension a mm : 0.20  
Rated speed rpm : 1150  
rack travel mm : 14.45  
Tolerance mm :  $\pm$  0.05

Rated speed rpm : 700  
rack travel mm : 14.70  
Tolerance mm :  $\pm$  0.10

Rated speed rpm : 950  
rack travel mm : 14.55  
Tolerance mm :  $\pm$  0.05

#### ANEROID/ALTITUDE COMPENSATOR TEST

##### SETTING

Rated speed rpm : 450  
Pressure hPa : 900  
rack travel mm : 14.70  
Tolerance mm :  $\pm$  0.10

##### MEASUREMENT

Pressure hPa : -  
Rated speed rpm : 450  
rack travel mm : 12.40  
Tolerance mm :  $\pm$  0.10

Rated speed rpm : 450

Pressure hPa : 390  
rack travel mm : 13.00  
Tolerance mm :  $\pm$  0.10

Pressure hPa : 530  
rack travel mm : 14.05

Tolerance mm :  $\pm$  0.05

#### START CUT-OUT

Rated speed rpm :  $<$  220  
Check  
speed 1/min :  $<$  240

#### FUEL DELIVERY CHARACTERISTICS

Aneroid pressure  
hPa : 900  
Rated speed rpm : 700  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 178.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  2.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  5.0

Aneroid pressure  
hPa : -  
Rated speed rpm : 450  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 124.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  1.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  4.0

#### BREAKAWAY

Rack travel in mm : 13.40  
Rated speed rpm : 1195  
Tolerance 1/min :  $\pm$  5

#### STARTING FUEL DELIVERY

Rated speed rpm : 100  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 185.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  15.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  19.0

#### LOW IDLE

Rated speed rpm : 300  
rack travel mm : 7.80  
Tolerance mm :  $\pm$  0.20

Del. quantity  
cm<sup>3</sup>/1000 strokes : 19.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  2.5  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  5.0  
Speed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 4.5  
Check tolerance  
cm<sup>3</sup>/1000S. : 7.5

---

End of test specification sheet

# BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and  
adjustment instructions.  
See microcard(s) W400/...

Edition : 05.09.95  
Test oil : ISO 4113

Combination No. : 0 402 640 817

Injection pump  
Pump designation : PE12P120A520LS7826  
EP type number : 0 412 620 817

Governor  
Governor design. : RQV350...1150PA870  
: -4  
Governor no. : 0 421 813 717

Cust. part No. :

Customer-spec. information  
Customer : MB-NFZ  
Motor : OM 444 LA  
Power kW : 736.0

## TEST BENCH REQUIREMENTS

Inlet line : 3.1

Test oil inlet  
temp. °C : 40  
Tolerance °C : ± 2.0

Overflow valve : 1 417 413 025

Inlet press. bar : 1.5

Overflow quantity  
min. l/h : 160  
Tolerance l/h : ± 10.0

Test nozzle holde  
assembly : 1 688 901 105

Opening pressure  
bar : 208.5  
Tolerance bar : ± 1.5

Test lines : 1 680 750 075

Outside diameter : 8.0

x inside diameter : 3.0  
x length mm : 1000

## REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

## BEGINNING OF DELIVERY

Test pressure bar : 26.0  
Tolerance bar : ± 1.0

Prestroke mm : 4.45  
Tolerance mm : ± 0.05

test only : ± 0.10

Rack travel in mm : 20.00  
Tolerance mm : ± 1.00

Firing order : 12- 1- 5- 9- 8  
: - 3- 4- 11- 10  
: - 2- 6- 7

Phasing : 0-45-60-105-120  
: -165-180-225-240  
: -285-300-345  
Tolerance : ± 0.30

Check  
tolerance °NW : ± 0.50

Start of delivery mark

Barrel no. : 12

## BASIC SETTING

Rated speed rpm : 1150

Rack travel in mm : 15.15  
Tolerance mm : ± 0.05

Del. quantity  
cm<sup>3</sup>/1000 strokes : 301.0



---

Tolerance  
cm<sup>3</sup>/1000 strokes : +- 1.0

---

Check tolerance  
cm<sup>3</sup>/1000S. : +- 4.0

---

Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 6.0

---

Check tolerance  
cm<sup>3</sup>/1000S. : 10.0

Rated speed rpm : 350

Rack travel in mm : 5.60  
Tolerance mm : +- 0.30

Del. quantity  
cm<sup>3</sup>/1000 strokes : 15.0

Tolerance  
cm<sup>3</sup>/1000 strokes : +- 3.0

Check tolerance  
cm<sup>3</sup>/1000S. : +- 6.0

Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0

Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

#### (B) SETTING OF INJECTION PUMP WITH GOVERNOR

---

##### GUIDE SLEEVE TRAVEL

Rated speed rpm : 350  
guide sleeve  
travel mm : 1.55  
Tolerance mm : +- 0.20

Rated speed rpm : 1206  
guide sleeve  
travel mm : 8.15  
Tolerance mm : +- 0.15

Rated speed rpm : 600  
guide sleeve  
travel mm : 3.55  
Tolerance mm : +- 0.25

Rated speed rpm : 960  
guide sleeve  
travel mm : 5.55  
Tolerance mm : +- 0.25

Rated speed rpm : 1291  
guide sleeve  
travel mm : 10.05

Tolerance mm : +- 0.25

---

##### GUIDE SLEEVE POSITION

Rated speed rpm : 1275

Rack travel in mm : 16.50  
Tolerance mm : +- 1.30

---

##### FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1150

Aneroid pressure  
hPa : 1800

Del. quantity  
cm<sup>3</sup>/1000 strokes : 301.0

Tolerance  
cm<sup>3</sup>/1000 strokes : +- 1.0

Check tolerance  
cm<sup>3</sup>/1000S. : +- 4.0

Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 6.0

Check tolerance  
cm<sup>3</sup>/1000S. : 10.0

---

##### CONTROL LEVER

control lever  
position degree : 117.0  
tolerance degree : +- 4.0

##### RATED SPEED

rack travel mm : 14.20  
Rated speed rpm : 1195  
Tolerance 1/min : +- 5

rack travel mm : 4.00  
Rated speed rpm : 1285  
Tolerance 1/min : +- 15

rack travel mm : 0.50  
Tolerance mm : +- 0.50  
Rated speed rpm : 1350

Rated speed rpm : 753  
Tolerance 1/min : +- 3  
rack travel mm : 10.80

Rated speed rpm : 785  
Tolerance 1/min : +- 5  
rack travel mm : 4.00

rack travel mm : 0.50  
Tolerance mm :  $\pm$  0.50  
Rated speed rpm : 900

rack travel mm : 10.80

rack travel mm : 4.00

rack travel mm : 0.50  
Tolerance mm :  $\pm$  0.50

rack travel mm : 10.80

rack travel mm : 4.00

rack travel mm : 0.50  
Tolerance mm :  $\pm$  0.50

rack travel mm : 10.80

rack travel mm : 4.00

rack travel mm : 0.50  
Tolerance mm :  $\pm$  0.50

rack travel mm : 10.80

rack travel mm : 4.00

rack travel mm : 0.50  
Tolerance mm :  $\pm$  0.50

rack travel mm : 10.80

rack travel mm : 4.00

rack travel mm : 0.50  
Tolerance mm :  $\pm$  0.50

---

#### LOW IDLE

control lever  
position degree : 66.0  
tolerance degree :  $\pm$  4.0

#### Testing:

Rated speed rpm : 350  
rack travel mm : 5.60  
Tolerance mm :  $\pm$  0.10

Rated speed rpm : 250

CRT mm min. :  $>$  7.30

Rated speed rpm : 475

---

#### TORQUE CONTROL

Rated speed rpm : 1150  
rack travel mm : 15.15  
Tolerance mm :  $\pm$  0.05

Rated speed rpm : 750  
rack travel mm : 15.25  
Tolerance mm :  $\pm$  0.10

---

#### ANEROID/ALTITUDE COMPENSATOR TEST

#### MEASUREMENT

Pressure hPa : -  
Rated speed rpm : 500

Pressure hPa : 400  
rack travel mm : 1.75  
Tolerance mm :  $\pm$  0.05

Pressure hPa : 1050  
rack travel mm : 5.90  
Tolerance mm :  $\pm$  0.10

---

#### START CUT-OUT

Rated speed rpm :  $<$  310  
Check  
speed 1/min :  $<$  330

---

#### FUEL DELIVERY CHARACTERISTICS

Aneroid pressure  
hPa : 1800  
Rated speed rpm : 750  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 306.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  5.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  8.0  
Speed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 10.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 15.0

Aneroid pressure  
hPa : 1800  
Rated speed rpm : 1150

Del. quantity  
cm<sup>3</sup>/1000 strokes : 234.5  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 1.5  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 4.5  
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 10.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 15.0

Aneroid pressure  
hPa : -  
Rated speed rpm : 500  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 124.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 1.0  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 4.0  
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 10.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 15.0

---

#### BREAKAWAY

Rack travel in mm : 14.20  
Rated speed rpm : 1195  
Tolerance 1/min : ± 5

---

#### STARTING FUEL DELIVERY

Rated speed rpm : 100  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 331.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 10.0  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 14.0

---

#### LOW IDLE

Rated speed rpm : 350  
rack travel mm : 5.60  
Tolerance mm : ± 0.30  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 15.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 3.0

Check tolerance  
cm<sup>3</sup>/1000S. : ± 6.0  
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

---

End of test specification sheet

# BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 12.10.95  
Test oil : ISO 4113  
Combination No. : 0 402 640 842  
Injection pump  
Pump designation : PE12P120A520/5RS7304  
EP type number : 0 412 620 838  
Governor  
Governor design. : RQV300...550/1050PA1  
: 093  
Governor no. : 0 421 814 067  
Cust. part No. :

Customer-spec. information  
Customer : MWM  
Motor : TBD234-FAUN

## TEST BENCH REQUIREMENTS

Inlet line : 3.1,3.2  
Test oil inlet  
temp. °C : 40  
Tolerance °C : ± 2.0  
Overflow valve : 1 417 413 025  
Overflow quantity  
min. L/h : 170  
Tolerance L/h : ± 10.0  
Test nozzle holder  
assembly : 1 688 901 019  
Opening pressure  
bar : 208.5  
Tolerance bar : ± 1.5  
Test lines : 1 680 750 075  
Outside diameter : 8.0

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x inside diameter : 3.0  
x length mm : 1000

## REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

## BEGINNING OF DELIVERY

Test pressure bar : 26.0  
Tolerance bar : ± 1.0  
Prestroke mm : 5.20  
Tolerance mm : ± 0.05  
test only : ± 0.10  
Rack travel in mm : 19.50  
Tolerance mm : ± 1.50  
Firing order : 1- 2- 9-10- 5- 6  
: - 11- 12- 3- 4  
: - 7- 8  
Phasing : 0-30-60-90-120-150  
: -180-210-240-270  
: -300-330  
Tolerance : ± 0.30  
Check  
tolerance °NW : ± 0.50  
Start of delivery mark  
Barrel no. : 1

## BASIC SETTING

Rated speed rpm : 1050  
Rack travel in mm : 13.60  
Tolerance mm : ± 0.05  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 235.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 1.0

---

Check tolerance  
cm<sup>3</sup>/1000S. : + 4.0

---

Spread  
Tolerance  
cm<sup>3</sup>/1000 strokes : 6.0

---

Check tolerance  
cm<sup>3</sup>/1000S. : 9.0

---

Rated speed rpm : 300

Rack travel in mm : 6.75  
Tolerance mm : + 0.20

Del. quantity  
cm<sup>3</sup>/1000 strokes : 38.0  
Tolerance

cm<sup>3</sup>/1000 strokes : + 5.0  
Check tolerance  
cm<sup>3</sup>/1000S. : + 8.0

Spread  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

#### (B) SETTING OF INJECTION PUMP WITH GOVERNOR

---

##### GUIDE SLEEVE TRAVEL

Rated speed rpm : 300  
guide sleeve  
travel mm : 1.30  
Tolerance mm : + 0.25

Rated speed rpm : 1107  
guide sleeve  
travel mm : 6.75  
Tolerance mm : + 0.25

Rated speed rpm : 1050  
guide sleeve  
travel mm : 6.00  
Tolerance mm : + 0.25

Rated speed rpm : 586  
guide sleeve  
travel mm : 5.55  
Tolerance mm : + 0.25

Rated speed rpm : 636  
guide sleeve  
travel mm : 6.00  
Tolerance mm : + 0.25

Rated speed rpm : 500

guide sleeve  
travel mm : 6.00  
Tolerance mm : + 0.25

Rated speed rpm : 1260  
guide sleeve  
travel mm : 11.50  
Tolerance mm : + 0.50

---

##### GUIDE SLEEVE POSITION

Rated speed rpm : 1160  
Rack travel in mm : 12.60  
Tolerance mm : + 2.00

---

##### FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1050  
Aneroid pressure  
hPa : 1250  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 235.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : + 1.0  
Check tolerance  
cm<sup>3</sup>/1000S. : + 4.0  
Spread  
Tolerance  
cm<sup>3</sup>/1000 strokes : 6.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 9.0

---

##### CONTROL LEVER

control lever  
position degree : 51.0  
tolerance degree : + 4.0

control lever  
position degree : 115.0  
tolerance degree : + 4.0

##### RATED SPEED

rack travel mm : 13.70  
Rated speed rpm : 1095  
Tolerance 1/min : + 5

rack travel mm : 4.00  
Rated speed rpm : 1155  
Tolerance 1/min : + 15

rack travel mm : 0.50  
Tolerance mm : + 0.50  
Rated speed rpm : 1300

---

#### LOW IDLE

control lever  
position degree : 85.0  
tolerance degree :  $\pm$  4.0

control lever  
position degree : 20.0  
tolerance degree :  $\pm$  4.0

#### Testing:

Rated speed rpm : 300  
rack travel mm : 6.75  
Tolerance mm :  $\pm$  0.10

Rated speed rpm : 200

CRT mm min. :  $>$  8.80

Rated speed rpm : 300

---

#### TORQUE CONTROL

Rated speed rpm : 1050  
rack travel mm : 13.60  
Tolerance mm :  $\pm$  0.05

Rated speed rpm : 800  
rack travel mm : 13.60  
Tolerance mm :  $\pm$  0.05

Rated speed rpm : 500  
rack travel mm : 14.70  
Tolerance mm :  $\pm$  0.05

---

#### ANEROID/ALTITUDE COMPENSATOR TEST

#### SETTING

Rated speed rpm : 500  
Pressure hPa : 2000  
rack travel mm : 14.70  
Tolerance mm :  $\pm$  0.05

#### MEASUREMENT

Pressure hPa : -  
Rated speed rpm : 500  
rack travel mm : 10.00  
Tolerance mm :  $\pm$  0.20

Rated speed rpm : 500

Pressure hPa : 225  
rack travel mm : 10.70  
Tolerance mm :  $\pm$  0.25

Pressure hPa : 595  
rack travel mm : 12.20  
Tolerance mm :  $\pm$  0.05

Pressure hPa : 1250  
rack travel mm : 13.60  
Tolerance mm :  $\pm$  0.05

Pressure hPa : 1450  
rack travel mm : 13.95  
Tolerance mm :  $\pm$  0.25

---

#### START CUT-OUT

Rated speed rpm :  $<$  220

Check  
speed 1/min :  $<$  240

---

#### FUEL DELIVERY CHARACTERISTICS

Aneroid pressure  
hPa : 1250  
Rated speed rpm : 800  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 234.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  3.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  6.0

Aneroid pressure  
hPa : -  
Rated speed rpm : 500  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 144.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  2.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  4.0

---

#### BREAKAWAY

Rack travel in mm : 13.70  
Rated speed rpm : 1095  
Tolerance 1/min :  $\pm$  5

---

#### STARTING FUEL DELIVERY

Rated speed rpm : 100  
rack travel mm : 20.50  
Tolerance mm :  $\pm$  0.50  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 274.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  10.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  14.0

---

LOW IDLE

Rated speed rpm : 300  
rack travel mm : 6.75  
Tolerance mm :  $\pm$  0.20  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 38.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  5.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  8.0  
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

---

End of test specification sheet

# BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 09.10.95  
Test oil : ISO 4113

Combination No. : 0 402 646 644

Injection pump  
Pump designation : FE6P120A320RS7319  
EP type number : 0 412 626 914

Governor  
Governor design. : RQV300...1400PA1124  
Governor no. : 0 421 814 086

Cust. part No. : 866633 P03 5.10.95

Customer-spec. information  
Customer : PENTA  
Motor : TAMD 63  
Power kW : 265.0

## TEST BENCH REQUIREMENTS

Inlet line : 3.1

Test oil inlet  
temp. °C : 40  
Tolerance °C : ± 2.0

Overflow valve : 2 417 413 077

Inlet press. bar : 1.5  
Tolerance bar : ± 0.1

Test nozzle holde  
assembly : 1 688 901 105

Opening pressure  
bar : 208.5  
Tolerance bar : ± 1.5

Test lines : 1 680 750 089

Outside diameter : 8.0

x inside diameter : 3.0  
x length mm : 600

## REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

## BEGINNING OF DELIVERY

Test pressure bar : 26.0  
Tolerance bar : ± 1.0

Prestroke mm : 3.65  
Tolerance mm : ± 0.05

test only : ± 0.10

Rack travel in mm : 10.50  
Tolerance mm : ± 1.50

Firing order : 1- 5- 3- 6- 2-  
: 4

Phasing : 0-60-120-180-240  
: -300

Tolerance : ± 0.30  
Check  
tolerance °NW : ± 0.75

Start of delivery mark

Barrel no. : 1

## BASIC SETTING

Rated speed rpm : 1000

Rack travel in mm : 12.90  
Tolerance mm : ± 0.05

Del. quantity  
cm<sup>3</sup>/1000 strokes : 241.0

Tolerance  
cm<sup>3</sup>/1000 strokes : ± 1.0



Check tolerance  
cm<sup>3</sup>/1000S. : + 4.0

Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0

Check tolerance  
cm<sup>3</sup>/1000S. : 11.0

Del. quantity  
cm<sup>3</sup>/1000 strokes : 23.0

Tolerance  
cm<sup>3</sup>/1000 strokes : + 3.0

Check tolerance  
cm<sup>3</sup>/1000S. : + 5.0

Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 5.0

Check tolerance  
cm<sup>3</sup>/1000S. : 8.0

#### (B) SETTING OF INJECTION PUMP WITH GOVERNOR

##### GUIDE SLEEVE TRAVEL

Rated speed rpm : 300  
guide sleeve  
travel mm : 1.24  
Tolerance mm : + 0.25

Rated speed rpm : 1456  
guide sleeve  
travel mm : 7.69  
Tolerance mm : + 0.25

Rated speed rpm : 1170  
guide sleeve  
travel mm : 5.67  
Tolerance mm : + 0.25

Rated speed rpm : 448  
guide sleeve  
travel mm : 2.83  
Tolerance mm : + 0.25

Rated speed rpm : 498  
guide sleeve  
travel mm : 3.20  
Tolerance mm : + 0.25

Rated speed rpm : 690  
guide sleeve  
travel mm : 3.68  
Tolerance mm : + 0.25

Rated speed rpm : 1638

guide sleeve  
travel mm : 10.00  
Tolerance mm : + 0.25

Rated speed rpm : 1760  
guide sleeve  
travel mm : 11.50  
Tolerance mm : + 0.50

##### GUIDE SLEEVE POSITION

Rated speed rpm : 1640

Rack travel in mm : 9.00  
Tolerance mm : + 3.00

##### FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1000  
Aneroid pressure  
hPa : 2000

Del. quantity  
cm<sup>3</sup>/1000 strokes : 241.0

Tolerance  
cm<sup>3</sup>/1000 strokes : + 1.0

Check tolerance  
cm<sup>3</sup>/1000S. : + 4.0

Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0

Check tolerance  
cm<sup>3</sup>/1000S. : 11.0

##### CONTROL LEVER

control lever  
position degree : 54.0  
tolerance degree : + 4.0

control lever  
position degree : 118.0  
tolerance degree : + 4.0

##### RATED SPEED

rack travel mm : 11.90  
Rated speed rpm : 1440  
Tolerance 1/min : + 5

rack travel mm : 4.00  
Rated speed rpm : 1570  
Tolerance 1/min : + 15

rack travel mm : 0.50  
Tolerance mm : + 0.50  
Rated speed rpm : 1650

---

#### LOW IDLE

control lever  
position degree : 81.0  
tolerance degree :  $\pm$  4.0

control lever  
position degree : 17.0  
tolerance degree :  $\pm$  4.0

#### Testing:

Rated speed rpm : 300  
rack travel mm : 5.40  
Tolerance mm :  $\pm$  0.20

Rated speed rpm : 200

CRT mm min. :  $>$  6.80

Rated speed rpm : 350

---

#### TORQUE CONTROL

Rated speed rpm : 1000  
rack travel mm : 12.90  
Tolerance mm :  $\pm$  0.05

Rated speed rpm : 1400  
rack travel mm : 12.90  
Tolerance mm :  $\pm$  0.10

---

#### ANEROID/ALTITUDE COMPENSATOR TEST

#### SETTING

Rated speed rpm : 500  
Pressure hPa : 2000  
rack travel mm : 13.30  
Tolerance mm :  $\pm$  0.05

#### MEASUREMENT

Pressure hPa : -  
Rated speed rpm : 500  
rack travel mm : 8.20  
Tolerance mm :  $\pm$  0.10

Rated speed rpm : 500

Pressure hPa : 1400  
rack travel mm : 4.70

Tolerance mm :  $\pm$  0.20

Pressure hPa : 430

rack travel mm : 0.25

Tolerance mm :  $\pm$  0.05

---

#### FUEL DELIVERY CHARACTERISTICS

Aneroid pressure

hPa : 2000

Rated speed rpm : 1400

Del. quantity

cm<sup>3</sup>/1000 strokes : 230.0

Tolerance

cm<sup>3</sup>/1000 strokes :  $\pm$  3.0

Check tolerance

cm<sup>3</sup>/1000S. :  $\pm$  5.0

Spread

Tolerance

cm<sup>3</sup>/1000 strokes : 10.0

Check tolerance

cm<sup>3</sup>/1000S. : 14.0

Aneroid pressure

hPa : -

Rated speed rpm : 500

Del. quantity

cm<sup>3</sup>/1000 strokes : 84.0

Tolerance

cm<sup>3</sup>/1000 strokes :  $\pm$  1.0

Check tolerance

cm<sup>3</sup>/1000S. :  $\pm$  4.0

---

#### BREAKAWAY

Rack travel in mm : 11.90

Rated speed rpm : 1440

Tolerance 1/min :  $\pm$  5

---

#### LOW IDLE

Del. quantity

cm<sup>3</sup>/1000 strokes : 23.0

Tolerance

cm<sup>3</sup>/1000 strokes :  $\pm$  3.0

Check tolerance

cm<sup>3</sup>/1000S. :  $\pm$  5.0

Spread

Tolerance

cm<sup>3</sup>/1000 strokes : 5.0

Check tolerance  
cm3/1000S. : 8.0

---

End of test specification sheet

# BOSCH INJ. PUMP TEST SPECIFICATIONS

## Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 13.10.95  
Test oil : ISO 4113

Combination No. : 0 402 646 744

Injection pump  
Pump designation : FE6P120A320LS7872  
EP type number : 0 412 626 912

Governor  
Governor design. : RGV300...1050PA1259  
Governor no. : 0 421 814 169

Cust. part No. : 04221532 KY 0165-17

## Customer-spec. information

Customer : KHD  
Motor : BF6M1015C  
Power kW : 270.0

## TEST BENCH REQUIREMENTS

Inlet line : 3.1

Test oil inlet  
temp. °C : 40  
Tolerance °C : ± 2.0

Overflow valve : 1 417 413 047

Inlet press. bar : 2.0  
Tolerance bar : ± 0.1

Overflow quantity  
min. l/h : 195  
Tolerance l/h : ± 10.0

Test nozzle holder  
assembly : 1 688 907 105

Opening pressure  
bar : 208.5  
Tolerance bar : ± 1.5

Test Lines : 1 680 750 075

Outside diameter : 8.0

x inside diameter : 3.0  
x length mm : 1000

## REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

## BEGINNING OF DELIVERY

Test pressure bar : 26.0  
Tolerance bar : ± 1.0

Prestroke mm : 4.05  
Tolerance mm : ± 0.05

test only : ± 0.10

Rack travel in mm : 10.50  
Tolerance mm : ± 1.50

Firing order : 1- 6- 3- 5- 2-  
: 4

Phasing : 0-60-120-180-240  
: -300  
Tolerance : ± 0.30  
Check  
tolerance °NW : ± 0.50

Start of delivery mark

Barrel no. : 1

## BASIC SETTING

Rated speed rpm : 1050

Rack travel in mm : 13.20  
Tolerance mm : ± 0.05

Del. quantity  
cm<sup>3</sup>/1000 strokes : 328.0

Tolerance  
cm3/1000 strokes :  $\pm$  1.0

Check tolerance  
cm3/1000S. :  $\pm$  4.0

Spread  
Tolerance  
cm3/1000 strokes : 6.0

Check tolerance  
cm3/1000S. : 9.0

Rated speed rpm : 300

Rack travel in mm : 4.60  
Tolerance mm :  $\pm$  0.20

Del. quantity  
cm3/1000 strokes : 23.0

Tolerance  
cm3/1000 strokes :  $\pm$  3.0

Check tolerance  
cm3/1000S. :  $\pm$  6.0

Spread  
Tolerance  
cm3/1000 strokes : 8.0

Check tolerance  
cm3/1000S. : 12.0

#### (B) SETTING OF INJECTION PUMP WITH GOVERNOR

##### GUIDE SLEEVE TRAVEL

Rated speed rpm : 300  
guide sleeve  
travel mm : 1.24  
Tolerance mm :  $\pm$  0.20

Rated speed rpm : 1098  
guide sleeve  
travel mm : 10.02  
Tolerance mm :  $\pm$  0.15

Rated speed rpm : 860  
guide sleeve  
travel mm : 5.59  
Tolerance mm :  $\pm$  0.25

Rated speed rpm : 560  
guide sleeve  
travel mm : 3.24  
Tolerance mm :  $\pm$  0.25

Rated speed rpm : 1154  
guide sleeve  
travel mm : 12.00  
Tolerance mm :  $\pm$  0.25

Rated speed rpm : 1230  
guide sleeve  
travel mm : 13.50  
Tolerance mm :  $\pm$  0.50

##### GUIDE SLEEVE POSITION

Rated speed rpm : 1130

Rack travel in mm : 12.70  
Tolerance mm :  $\pm$  1.30

##### FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1050  
Aneroid pressure  
hPa : 1700

Del. quantity  
cm3/1000 strokes : 328.0

Tolerance  
cm3/1000 strokes :  $\pm$  1.0

Check tolerance  
cm3/1000S. :  $\pm$  4.0

Spread  
Tolerance  
cm3/1000 strokes : 6.0

Check tolerance  
cm3/1000S. : 9.0

##### CONTROL LEVER

control lever  
position degree : 122.0  
tolerance degree :  $\pm$  4.0

##### RATED SPEED

rack travel mm : 12.20  
Rated speed rpm : 1085  
Tolerance 1/min :  $\pm$  5

rack travel mm : 4.00  
Rated speed rpm : 1125  
Tolerance 1/min :  $\pm$  15

rack travel mm : 0.50  
Tolerance mm :  $\pm$  0.50  
Rated speed rpm : 1280

##### LOW IDLE

control lever  
position degree : 75.0  
tolerance degree : +- 4.0

#### Testing:

Rated speed rpm : 300  
rack travel mm : 4.60  
Tolerance mm : +- 0.10

Rated speed rpm : 200  
CRT mm min. : > 6.10

Rated speed rpm : 345

---

#### TORQUE CONTROL

Rated speed rpm : 1050  
rack travel mm : 13.20  
Tolerance mm : +- 0.05

---

#### ANEROID/ALTITUDE COMPENSATOR TEST

#### SETTING

Rated speed rpm : 400  
Pressure hPa : 1700  
rack travel mm : 13.20  
Tolerance mm : +- 0.05

#### MEASUREMENT

Pressure hPa : -  
Rated speed rpm : 400  
rack travel mm : 8.30  
Tolerance mm : +- 0.20

Rated speed rpm : 400

Pressure hPa : 450  
rack travel mm : 9.20  
Tolerance mm : +- 0.10

Pressure hPa : 1000  
rack travel mm : 12.00  
Tolerance mm : +- 0.05

---

#### FUEL DELIVERY CHARACTERISTICS

Aneroid pressure  
hPa : -  
Rated speed rpm : 400

Del. quantity  
cm3/1000 strokes : 230.0  
Tolerance  
cm3/1000 strokes : +- 1.0  
Check tolerance  
cm3/1000S. : +- 4.0

---

#### BREAKAWAY

Rack travel in mm : 12.20  
Rated speed rpm : 1085  
Tolerance 1/min : +- 5

---

#### STARTING FUEL DELIVERY

Rated speed rpm : 100  
rack travel mm : 8.30  
Tolerance mm : +- 0.30  
Del. quantity  
cm3/1000 strokes : 135.0  
Tolerance  
cm3/1000 strokes : +- 20.0  
Check tolerance  
cm3/1000S. : +- 24.0

---

#### LOW IDLE

Rated speed rpm : 300  
rack travel mm : 4.60  
Tolerance mm : +- 0.20  
Del. quantity  
cm3/1000 strokes : 23.0  
Tolerance  
cm3/1000 strokes : +- 3.0  
Check tolerance  
cm3/1000S. : +- 6.0  
Speed  
Tolerance  
cm3/1000 strokes : 8.0  
Check tolerance  
cm3/1000S. : 12.0

---

End of test specification sheet

# BOSCH INJ. PUMP TEST SPECIFICATIONS

## Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 17.10.95  
Test oil : ISO 4113

Combination No. : 0 402 648 926

Injection pump  
Pump designation : FE8P120A320LS7840  
EP type number : 0 412 628 850

Governor  
Governor design. : RQ300/1050PA972-11  
Governor no. : 0 421 801 739

Cust. part No. : 0220747002

Customer-spec. information  
Customer : MB-NFZ  
Motor : OM442 A  
Power KW : 250.0

## TEST BENCH REQUIREMENTS

Inlet line : 3.1

Test oil inlet  
temp. °C : 40  
Tolerance °C : +- 2.0

Overflow valve : 1 417 413 025

Inlet press. bar : 1.5  
Tolerance bar : +- 0.1

Tolerance l/h : +- 10.0

Test nozzle holde  
assembly : 1 688 901 105

Opening pressure  
bar : 208.5  
Tolerance bar : +- 1.5

Test Lines : 1 680 750 075

Outside diameter : 8.0

x inside diameter : 3.0

x length mm : 1000

## REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

## BEGINNING OF DELIVERY

Test pressure bar : 26.0  
Tolerance bar : +- 1.0

Prestroke mm : 5.25  
Tolerance mm : +- 0.05

test only : +- 0.10

Rack travel in mm : 20.50  
Tolerance mm : +- 0.50

Firing order : 8- 7- 2- 6- 3  
                  : - 5- 4- 1

Phasing : 0-45-90-135-180  
          : -225-270-315

Tolerance : +- 0.30  
Check  
tolerance °NW : +- 0.50

Start of delivery mark

Barrel no. : 8

## BASIC SETTING

Rated speed rpm : 1050

Rack travel in mm : 12.60  
Tolerance mm : +- 0.10

Del. quantity  
cm<sup>3</sup>/1000 strokes : 194.0

Tolerance  
cm<sup>3</sup>/1000 strokes : +- 1.0

Check tolerance  
cm3/1000S. : + 4.0

Spreed  
Tolerance  
cm3/1000 strokes : 8.0

Check tolerance  
cm3/1000S. : 11.0

Rated speed rpm : 300

Rack travel in mm : 6.50  
Tolerance mm : + 0.30

Del. quantity  
cm3/1000 strokes : 13.0

Tolerance  
cm3/1000 strokes : + 3.0

Check tolerance  
cm3/1000S. : + 6.0

Spreed  
Tolerance  
cm3/1000 strokes : 4.0

Check tolerance  
cm3/1000S. : 8.0

(B) SETTING OF INJECTION PUMP  
WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 300  
guide sleeve  
travel mm : 1.85  
Tolerance mm : + 0.10

Rated speed rpm : 1104  
guide sleeve  
travel mm : 6.37  
Tolerance mm : + 0.10

Rated speed rpm : 1050  
guide sleeve  
travel mm : 6.00  
Tolerance mm : + 0.10

Rated speed rpm : 402  
guide sleeve  
travel mm : 3.68  
Tolerance mm : + 0.10

Rated speed rpm : 540  
guide sleeve  
travel mm : 6.00  
Tolerance mm : + 0.10

Rated speed rpm : 1290

guide sleeve  
travel mm : 11.50  
Tolerance mm : + 0.50

GUIDE SLEEVE POSITION

Rated speed rpm : 600

Rack travel in mm : 20.00  
Tolerance mm : + 0.80

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1050

Aneroid pressure  
hPa : 1000

Del. quantity  
cm3/1000 strokes : 194.0

Tolerance  
cm3/1000 strokes : + 1.0

Check tolerance  
cm3/1000S. : + 4.0

Spreed  
Tolerance  
cm3/1000 strokes : 8.0

Check tolerance  
cm3/1000S. : 11.0

CONTROL LEVER

control lever  
position degree : 96.0  
tolerance degree : + 4.0

RATED SPEED

rack travel mm : 11.60  
Rated speed rpm : 1098  
Tolerance 1/min : + 8

rack travel mm : 4.00  
Rated speed rpm : 1200  
Tolerance 1/min : + 15

rack travel mm : 0.75  
Tolerance mm : + 0.75  
Rated speed rpm : 1250

LOW IDLE

control lever  
position degree : 74.0  
tolerance degree : + 4.0



### Testing:

Rated speed rpm : 300  
rack travel mm : 6.50  
Tolerance mm :  $\pm$  0.10

rack travel mm : 2.00  
Rated speed rpm : 435  
Tolerance 1/min :  $\pm$  20

Rated speed rpm : 200  
CRT mm min. :  $>$  7.90

### TORQUE CONTROL

Rated speed rpm : 1050  
rack travel mm : 12.60  
Tolerance mm :  $\pm$  0.10

Rated speed rpm : 800  
rack travel mm : 12.60  
Tolerance mm :  $\pm$  0.10

### ANEROID/ALTITUDE COMPENSATOR TEST

#### SETTING

Rated speed rpm : 450  
Pressure hPa : 1000  
rack travel mm : 12.60  
Tolerance mm :  $\pm$  0.05

#### MEASUREMENT

Pressure hPa : -  
Rated speed rpm : 450  
rack travel mm : 11.10  
Tolerance mm :  $\pm$  0.15

Rated speed rpm : 450

Pressure hPa : 380  
rack travel mm : 11.70  
Tolerance mm :  $\pm$  0.15

Pressure hPa : 500  
rack travel mm : 12.35  
Tolerance mm :  $\pm$  0.20

#### START CUT-OUT

Rated speed rpm :  $<$  220

Check  
speed 1/min :  $<$  240

### FUEL DELIVERY CHARACTERISTICS

Aneroid pressure  
hPa : 1000  
Rated speed rpm : 800  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 195.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  2.0  
Check tolerance  
cm<sup>3</sup>/1000s. :  $\pm$  5.0

Aneroid pressure  
hPa : -  
Rated speed rpm : 500  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 138.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  1.0  
Check tolerance  
cm<sup>3</sup>/1000s. :  $\pm$  4.0

### BREAKAWAY

Rack travel in mm : 11.60  
Rated speed rpm : 1098  
Tolerance 1/min :  $\pm$  8

### STARTING FUEL DELIVERY

Rated speed rpm : 100  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 190.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  15.0  
Check tolerance  
cm<sup>3</sup>/1000s. :  $\pm$  19.0

### LOW IDLE

Rated speed rpm : 300  
rack travel mm : 6.50  
Tolerance mm :  $\pm$  0.30  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 13.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  3.0  
Check tolerance  
cm<sup>3</sup>/1000s. :  $\pm$  6.0

Speed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 4.0  
Check tolerance  
cm<sup>3</sup>/1000s. : 8.0

---

End of test specification sheet

# BOSCH INJ. PUMP TEST SPECIFICATIONS

## Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 17.10.95  
Test oil : ISO 4113

Combination No. : 0 402 648 927

Injection pump  
Pump designation : FE8P120A320LS7840  
EP type number : 0 412 628 850

Governor  
Governor design. : RQV300...1050PA797  
: -38  
Governor no. : 0 421 814 084

Cust. part No. : 0220747102

Customer-spec. information  
Customer : MB-NFZ  
Motor : OM442 A  
Power KW : 250.0

## TEST BENCH REQUIREMENTS

Inlet line : 3.1

Test oil inlet  
temp. °C : 40  
Tolerance °C : ± 2.0

Overflow valve : 1 419 992 198

Inlet press. bar : 1.5  
Tolerance bar : ± 0.1

Overflow quantity  
min. l/h : 110  
Tolerance l/h : ± 10.0

Test nozzle holde  
assembly : 1 688 901 105

Opening pressure  
bar : 208.5  
Tolerance bar : ± 1.5

Test lines : 1 680 750 075

Outside diameter : 8.0

x inside diameter : 3.0  
x length mm : 1000

## REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

## BEGINNING OF DELIVERY

Test pressure bar : 26.0  
Tolerance bar : ± 1.0

Prestroke mm : 5.25  
Tolerance mm : ± 0.05

test only : ± 0.10

Rack travel in mm : 20.50  
Tolerance mm : ± 0.50

Firing order : 8- 7- 2- 6- 3  
: - 5- 4- 1

Phasing : 0-45-90-135-180  
: -225-270-315  
Tolerance : ± 0.30  
Check  
tolerance °NW : ± 0.50

Start of delivery mark

Barrel no. : 8

## BASIC SETTING

Rated speed rpm : 1050

Rack travel in mm : 12.60  
Tolerance mm : ± 0.05

Del. quantity  
cm<sup>3</sup>/1000 strokes : 194.0

Tolerance  
cm<sup>3</sup>/1000 strokes : ± 1.0

Check tolerance  
cm<sup>3</sup>/1000S. : ± 4.0

Spread  
Tolerance  
cm<sup>3</sup>/1000 strokes : 6.0

Check tolerance  
cm<sup>3</sup>/1000S. : 9.0

Rated speed rpm : 300

Rack travel in mm : 6.50  
Tolerance mm : ± 0.30

Del. quantity  
cm<sup>3</sup>/1000 strokes : 13.0

Tolerance  
cm<sup>3</sup>/1000 strokes : ± 3.0

Check tolerance  
cm<sup>3</sup>/1000S. : ± 6.0

Spread  
Tolerance  
cm<sup>3</sup>/1000 strokes : 4.0

Check tolerance  
cm<sup>3</sup>/1000S. : 8.0

#### (B) SETTING OF INJECTION PUMP WITH GOVERNOR

##### GUIDE SLEEVE POSITION

Rated speed rpm : 1100

Rack travel in mm : 16.50  
Tolerance mm : ± 1.30

##### FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1050

Aneroid pressure  
hPa : 1000

Del. quantity  
cm<sup>3</sup>/1000 strokes : 194.0

Tolerance  
cm<sup>3</sup>/1000 strokes : ± 1.0

Check tolerance  
cm<sup>3</sup>/1000S. : ± 4.0

Spread  
Tolerance  
cm<sup>3</sup>/1000 strokes : 6.0

Check tolerance  
cm<sup>3</sup>/1000S. : 9.0

##### CONTROL LEVER

control lever  
position degree : 122.0  
tolerance degree : ± 4.0

##### RATED SPEED

rack travel mm : 11.60  
Rated speed rpm : 1095  
Tolerance 1/min : ± 5

rack travel mm : 4.00  
Rated speed rpm : 1165  
Tolerance 1/min : ± 15

rack travel mm : 0.50  
Tolerance mm : ± 0.50  
Rated speed rpm : 1250

##### LOW IDLE

control lever  
position degree : 86.0  
tolerance degree : ± 4.0

##### Testing:

Rated speed rpm : 300  
rack travel mm : 6.50  
Tolerance mm : ± 0.10

Rated speed rpm : 200

GRT mm min. : > 7.90

Rated speed rpm : 375

##### TORQUE CONTROL

Rated speed rpm : 1050  
rack travel mm : 12.60  
Tolerance mm : ± 0.05

Rated speed rpm : 800  
rack travel mm : 12.60  
Tolerance mm : ± 0.05

##### ANEROID/ALTITUDE COMPENSATOR TEST

##### SETTING

Pressure hPa : 1000  
rack travel mm : 12.60  
Tolerance mm :  $\pm$  0.05

#### MEASUREMENT

Pressure hPa : -  
Rated speed rpm : 450  
rack travel mm : 11.10  
Tolerance mm :  $\pm$  0.15

Pressure hPa : 380  
rack travel mm : 11.75  
Tolerance mm :  $\pm$  0.15

Pressure hPa : 500  
rack travel mm : 12.35  
Tolerance mm :  $\pm$  0.20

#### START CUT-OUT

Rated speed rpm : < 220  
Check  
speed 1/min : < 240

#### FUEL DELIVERY CHARACTERISTICS

Aneroid pressure  
hPa : 1000  
Rated speed rpm : 800  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 195.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  2.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  5.0

Aneroid pressure  
hPa : -  
Rated speed rpm : 500  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 138.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  1.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  4.0

#### BREAKAWAY

Rack travel in mm : 11.60  
Rated speed rpm : 1095  
Tolerance 1/min :  $\pm$  5

#### STARTING FUEL DELIVERY

Rated speed rpm : 100  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 190.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  10.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  14.0

#### LOW IDLE

Rated speed rpm : 300  
rack travel mm : 6.50  
Tolerance mm :  $\pm$  0.30  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 13.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  3.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  6.0  
Speed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 4.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 8.0

End of test specification sheet

# BOSCH INJ. PUMP TEST SPECIFICATIONS

## Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 26.04.94  
Test oil : ISO 4113

Combination No. : 0 402 648 949

Injection pump  
Pump designation : FE8P120A320LS7863  
EP type number : 0 412 628 874

Governor  
Governor design. : RQV300...950PA1050  
: -2K  
Governor no. : 0 421 815 381

Cust. part No. : 0240740002

Customer-spec. information  
Customer : MB-NFZ  
Motor : OM442 LA  
Power KW : 370.0

## TEST BENCH REQUIREMENTS

Inlet line : 3.1

Test oil inlet  
temp. °C : 40  
Tolerance °C : ± 2.0

Overflow valve : 1 417 413 025

Inlet press. bar : 1.5  
Tolerance bar : ± 0.1

Overflow quantity  
min. L/h : 105  
Tolerance L/h : ± 10.0

Test nozzle holder  
assembly : 1 688 901 105

Opening pressure  
bar : 208.5  
Tolerance bar : ± 1.5

Test lines : 1 680 750 075

Outside diameter : 8.0

x inside diameter : 3.0  
x length mm : 1000

## REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

## BEGINNING OF DELIVERY

Test pressure bar : 26.0  
Tolerance bar : ± 1.0

Prestroke mm : 5.05  
Tolerance mm : ± 0.05

test only : ± 0.10

Rack travel in mm : 14.05  
Tolerance mm : ± 0.50

Firing order : 8- 7- 2- 6- 3  
: - 5- 4- 1

Phasing : 0-45-90-135-180  
: -225-270-315

Tolerance : ± 0.30  
Check  
tolerance °NW : ± 0.50

Start of delivery mark

Barrel no. : 8

## BASIC SETTING

Rated speed rpm : 950

Rack travel in mm : 14.80  
Tolerance mm : ± 0.05

Del. quantity  
cm<sup>3</sup>/1000 strokes : 282.0

Tolerance  
cm<sup>3</sup>/1000 strokes : ± 1.0

Check tolerance  
cm<sup>3</sup>/1000S. : ± 4.0

Spread  
Tolerance  
cm<sup>3</sup>/1000 strokes : 6.0

Check tolerance  
cm<sup>3</sup>/1000S. : 9.0

Rated speed rpm : 300

Rack travel in mm : 5.70  
Tolerance mm : ± 0.30

Del. quantity  
cm<sup>3</sup>/1000 strokes : 19.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 3.0  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 6.0

Spread  
Tolerance  
cm<sup>3</sup>/1000 strokes : 6.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 10.0

#### (B) SETTING OF INJECTION PUMP WITH GOVERNOR

##### GUIDE SLEEVE TRAVEL

Rated speed rpm : 300  
guide sleeve  
travel mm : 1.63  
Tolerance mm : ± 0.25

Rated speed rpm : 1006  
guide sleeve  
travel mm : 7.50  
Tolerance mm : ± 0.25

Rated speed rpm : 790  
guide sleeve  
travel mm : 5.00  
Tolerance mm : ± 0.25

Rated speed rpm : 350  
guide sleeve  
travel mm : 2.56  
Tolerance mm : ± 0.25

Rated speed rpm : 400

guide sleeve  
travel mm : 3.10  
Tolerance mm : ± 0.25

Rated speed rpm : 510  
guide sleeve  
travel mm : 3.52  
Tolerance mm : ± 0.25

Rated speed rpm : 1192  
guide sleeve  
travel mm : 12.00  
Tolerance mm : ± 0.25

Rated speed rpm : 1280  
guide sleeve  
travel mm : 13.50  
Tolerance mm : ± 0.50

##### GUIDE SLEEVE POSITION

Rated speed rpm : 1160

Rack travel in mm : 13.80  
Tolerance mm : ± 1.30

##### FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 950  
Aneroid pressure  
hPa : 1200  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 282.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 1.0  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 4.0  
Spread  
Tolerance  
cm<sup>3</sup>/1000 strokes : 6.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 9.0

##### CONTROL LEVER

control lever  
position degree : 114.0  
tolerance degree : ± 4.0

##### RATED SPEED

rack travel mm : 13.80  
Rated speed rpm : 995  
tolerance 1/min : ± 5

rack travel mm : 4.00

Rated speed rpm : 1095  
 Tolerance 1/min : + 15  
 rack travel mm : 0.75  
 Tolerance mm : + 0.75  
 Rated speed rpm : 1250

#### LOW IDLE

control lever  
 position degree : 76.0  
 tolerance degree : + 4.0

#### Testing:

Rated speed rpm : 300  
 rack travel mm : 5.20  
 Tolerance mm : + 0.10

Rated speed rpm : 200  
 CRT mm min. : > 7.30

Rated speed rpm : 300

#### TORQUE CONTROL

Rated speed rpm : 950  
 rack travel mm : 14.80  
 Tolerance mm : + 0.05

Rated speed rpm : 850  
 rack travel mm : 15.00  
 Tolerance mm : + 0.10

Rated speed rpm : 750  
 rack travel mm : 14.50  
 Tolerance mm : + 0.10

Rated speed rpm : 700  
 rack travel mm : 14.20  
 Tolerance mm : + 0.10

Rated speed rpm : 650  
 rack travel mm : 14.00  
 Tolerance mm : + 0.10

Rated speed rpm : 550  
 rack travel mm : 13.95  
 Tolerance mm : + 0.10

Rated speed rpm : 400  
 rack travel mm : 12.20  
 Tolerance mm : + 0.10

#### ANEROID/ALTITUDE COMPENSATOR TEST

#### SETTING

Rated speed rpm : 850  
 Pressure hPa : 1200  
 rack travel mm : 15.00  
 Tolerance mm : + 0.05

#### MEASUREMENT

Pressure hPa : -  
 Rated speed rpm : 850  
 rack travel mm : 7.95  
 Tolerance mm : + 0.15

Rated speed rpm : 850

Pressure hPa : 500  
 rack travel mm : 12.20  
 Tolerance mm : + 0.10

Pressure hPa : 150  
 rack travel mm : 8.80  
 Tolerance mm : + 0.20

#### START CUT-OUT

Rated speed rpm : < 220  
 Check  
 speed 1/min : < 240

#### FUEL DELIVERY CHARACTERISTICS

Aneroid pressure  
 hPa : 1200  
 Rated speed rpm : 750  
 Del. quantity  
 cm<sup>3</sup>/1000 strokes : 277.0  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : + 2.0  
 Check tolerance  
 cm<sup>3</sup>/1000s. : + 5.0  
 Spread  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : 8.0  
 Check tolerance  
 cm<sup>3</sup>/1000s. : 12.0

Aneroid pressure  
 hPa : 1200  
 Rated speed rpm : 550  
 Del. quantity  
 cm<sup>3</sup>/1000 strokes : 268.0



Tolerance  
 cm3/1000 strokes : + 3.0  
 Check tolerance  
 cm3/1000S. : + 6.0  
 Spread  
 Tolerance  
 cm3/1000 strokes : 8.0  
 Check tolerance  
 cm3/1000S. : 12.0

Aneroid pressure  
 hPa : 500  
 Rated speed rpm : 400  
 Del. quantity  
 cm3/1000 strokes : 196.0  
 Tolerance  
 cm3/1000 strokes : + 1.5  
 Check tolerance  
 cm3/1000S. : + 4.5

Aneroid pressure  
 hPa : -  
 Rated speed rpm : 500  
 Del. quantity  
 cm3/1000 strokes : 133.0  
 Tolerance  
 cm3/1000 strokes : + 1.0  
 Check tolerance  
 cm3/1000S. : + 4.0  
 Spread  
 Tolerance  
 cm3/1000 strokes : 8.0  
 Check tolerance  
 cm3/1000S. : 12.0

#### BREAKAWAY

Rack travel in mm : 13.80  
 Rated speed rpm : 995  
 Tolerance 1/min : + 5

#### STARTING FUEL DELIVERY

Rated speed rpm : 100  
 rack travel mm : 11.80  
 Tolerance mm : + 0.40  
 Del. quantity  
 cm3/1000 strokes : 130.0  
 Tolerance  
 cm3/1000 strokes : + 10.0  
 Check tolerance  
 cm3/1000S. : + 14.0

#### LOW IDLE

Rated speed rpm : 300  
 rack travel mm : 5.70  
 Tolerance mm : + 0.30  
 Del. quantity  
 cm3/1000 strokes : 19.0  
 Tolerance  
 cm3/1000 strokes : + 3.0  
 Check tolerance  
 cm3/1000S. : + 6.0  
 Spread  
 Tolerance  
 cm3/1000 strokes : 6.0  
 Check tolerance  
 cm3/1000S. : 10.0

End of test specification sheet

# BOSCH INJ. PUMP TEST SPECIFICATIONS

## Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 19.07.95  
Test oil : ISO 4113

Combination No. : 0 402 648 953C

Injection pump  
Pump designation : FE8P120A320LS7859  
EP type number : 0 412 628 869

Governor  
Governor design. : RQV300...950PA1033  
: -10  
Governor no. : 0 421 814 040

Cust. part No. : 0230749702

Customer-spec. information  
Customer : MB-NFZ  
Motor : OM442 LA  
Power KW : 320.0

## TEST BENCH REQUIREMENTS

Inlet line : 3.1

Test oil inlet  
temp. °C : 40  
Tolerance °C : ± 2.0

Overflow valve : 1 417 413 047

Inlet press. bar : 1.5  
Tolerance bar : ± 0.1

Tolerance l/h : ± 10.0

Test nozzle holde  
assembly : 1 688 901 105

Opening pressure  
bar : 208.5  
Tolerance bar : ± 1.5

Test lines : 1 680 750 075

Outside diameter : 8.0

x inside diameter : 3.0  
x length mm : 1000

## REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

## BEGINNING OF DELIVERY

Test pressure bar : 26.0  
Tolerance bar : ± 1.0

Prestroke mm : 5.25  
Tolerance mm : ± 0.05

test only : ± 0.10

Rack travel in mm : 20.50  
Tolerance mm : ± 0.50

Firing order : 8- 7- 2- 6- 3  
: - 5- 4- 1

Phasing : 0-45-90-135-180  
: -225-270-315  
Tolerance : ± 0.30  
Check  
tolerance °NW : ± 0.50

Start of delivery mark

Barrel no. : 8

## BASIC SETTING

Rated speed rpm : 550

Rack travel in mm : 15.00  
Tolerance mm : ± 0.05

Del. quantity  
cm<sup>3</sup>/1000 strokes : 254.0

Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  1.0

Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  4.0

Spread  
Tolerance  
cm<sup>3</sup>/1000 strokes : 6.0

Check tolerance  
cm<sup>3</sup>/1000S. : 9.0

Rated speed rpm : 300

Rack travel in mm : 6.10  
Tolerance mm :  $\pm$  0.30

Del. quantity  
cm<sup>3</sup>/1000 strokes : 19.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  3.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  6.0

Spread  
Tolerance  
cm<sup>3</sup>/1000 strokes : 6.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 10.0

#### (B) SETTING OF INJECTION PUMP WITH GOVERNOR

##### GUIDE SLEEVE TRAVEL

Rated speed rpm : 300  
guide sleeve  
travel mm : 1.29  
Tolerance mm :  $\pm$  0.25

Rated speed rpm : 1009  
guide sleeve  
travel mm : 8.55  
Tolerance mm :  $\pm$  0.25

Rated speed rpm : 1570  
guide sleeve  
travel mm : 24.56  
Tolerance mm :  $\pm$  0.25

Rated speed rpm : 567  
guide sleeve  
travel mm : 4.66  
Tolerance mm :  $\pm$  0.25

Rated speed rpm : 617  
guide sleeve  
travel mm : 5.23  
Tolerance mm :  $\pm$  0.25

Rated speed rpm : 780  
guide sleeve  
travel mm : 6.31  
Tolerance mm :  $\pm$  0.25

Rated speed rpm : 1092  
guide sleeve  
travel mm : 10.00  
Tolerance mm :  $\pm$  0.25

Rated speed rpm : 1190  
guide sleeve  
travel mm : 11.50  
Tolerance mm :  $\pm$  0.50

##### GUIDE SLEEVE POSITION

Rated speed rpm : 1035

Rack travel in mm : 14.00  
Tolerance mm :  $\pm$  1.30

##### FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 550  
Aneroid pressure  
hPa : 1000  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 254.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  1.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  4.0  
Spread  
Tolerance  
cm<sup>3</sup>/1000 strokes : 6.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 9.0

##### CONTROL LEVER

control lever  
position degree : 121.0  
tolerance degree :  $\pm$  4.0

##### RATED SPEED

rack travel mm : 14.00  
Rated speed rpm : 995  
Tolerance 1/min :  $\pm$  5

rack travel mm : 4.00  
Rated speed rpm : 1090  
Tolerance 1/min :  $\pm$  15

rack travel mm : 0.75  
Tolerance mm :  $\pm$  0.75  
Rated speed rpm : 1200

---

#### LOW IDLE

control lever  
position degree : 86.0  
tolerance degree :  $\pm$  4.0

#### Testing:

Rated speed rpm : 300  
rack travel mm : 6.10  
Tolerance mm :  $\pm$  0.10

rack travel mm : 2.00  
Rated speed rpm : 443  
Tolerance 1/min :  $\pm$  20

Rated speed rpm : 200

CRT mm min. :  $>$  9.00

Rated speed rpm : 350

---

#### TORQUE CONTROL

Rated speed rpm : 550  
rack travel mm : 15.00  
Tolerance mm :  $\pm$  0.05

Rated speed rpm : 950  
rack travel mm : 15.00  
Tolerance mm :  $\pm$  0.05

---

#### ANEROID/ALTITUDE COMPENSATOR TEST

#### SETTING

Rated speed rpm : 400  
Pressure hPa : 1000  
rack travel mm : 15.00  
Tolerance mm :  $\pm$  0.05

#### MEASUREMENT

Pressure hPa : -  
Rated speed rpm : 400  
rack travel mm : 9.10  
Tolerance mm :  $\pm$  0.15

Rated speed rpm : 400

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Pressure hPa : 250  
rack travel mm : 10.80  
Tolerance mm :  $\pm$  0.10

Pressure hPa : 550  
rack travel mm : 13.70  
Tolerance mm :  $\pm$  0.10

---

#### START CUT-OUT

Rated speed rpm :  $<$  220  
Check  
speed 1/min :  $<$  240

---

#### FUEL DELIVERY CHARACTERISTICS

Aneroid pressure  
hPa : 1000  
Rated speed rpm : 950  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 242.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  2.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  5.0  
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

Aneroid pressure  
hPa : -  
Rated speed rpm : 500  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 135.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  1.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  4.0  
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

---

#### BREAKAWAY

Rack travel in mm : 14.00  
Rated speed rpm : 995  
Tolerance 1/min :  $\pm$  5

---

#### STARTING FUEL DELIVERY

Rated speed rpm : 100  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 235.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  10.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  14.0

---

LOW IDLE

Rated speed rpm : 300  
rack travel mm : 6.10  
Tolerance mm :  $\pm$  0.30  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 19.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  3.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  6.0  
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 6.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 10.0

---

End of test specification sheet

# BOSCH INJ. PUMP TEST SPECIFICATIONS

## Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 29.06.95  
Test oil : ISO 4113

Combination No. : 0 402 678 803

Injection pump  
Pump designation : FE8P120A320LS7801-1  
EP type number : 0 412 628 818

Governor  
Governor design. : RSV350...750FOA825  
: -3  
Governor no. : 0 421 833 260

Cust. part No. :

Customer-spec. information  
Customer : MB-NFZ  
Motor : OM442A  
Power KW : 240.0

## TEST BENCH REQUIREMENTS

Inlet line : 3.1

Test oil inlet  
temp. °C : 40  
Tolerance °C : ± 2.0

Overflow valve : 1 417 413 025

Inlet press. bar : 1.5  
Tolerance bar : ± 0.1

Overflow quantity  
min. l/h : 110  
Tolerance l/h : ± 10.0

Test nozzle holder  
assembly : 1 688 901 019

Opening pressure  
bar : 208.5  
Tolerance bar : ± 1.5

MD6

Test lines : 1 680 750 067

Outside diameter : 6.0

x inside diameter : 1.5  
x length mm : 1000

## REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

## BEGINNING OF DELIVERY

Test pressure bar : 26.0  
Tolerance bar : ± 1.0

Prestroke mm : 5.25  
Tolerance mm : ± 0.05

test only : ± 0.10

Rack travel in mm : 10.50  
Tolerance mm : ± 1.50

Firing order : 8- 7- 2- 6- 3  
: - 5- 4- 1

Phasing : 0-45-90-135-180  
: -225-270-315  
Tolerance : ± 0.30  
Check  
tolerance °NW : ± 0.50

Start of delivery mark

Barrel no. : 8

## BASIC SETTING

Rated speed rpm : 700

Rack travel in mm : 15.15  
Tolerance mm : ± 0.05

Del. quantity  
cm<sup>3</sup>/1000 strokes : 234.0

Tolerance  
cm<sup>3</sup>/1000 strokes : +- 1.0

Check tolerance  
cm<sup>3</sup>/1000S. : +- 4.0

Spread  
Tolerance  
cm<sup>3</sup>/1000 strokes : 5.0

Check tolerance  
cm<sup>3</sup>/1000S. : 9.0

Rated speed rpm : 350

Rack travel in mm : 5.30  
Tolerance mm : +- 0.30

Del. quantity  
cm<sup>3</sup>/1000 strokes : 19.0

Tolerance  
cm<sup>3</sup>/1000 strokes : +- 3.0

Check tolerance  
cm<sup>3</sup>/1000S. : +- 6.0

Spread  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

#### (B) SETTING OF INJECTION PUMP WITH GOVERNOR

##### GUIDE SLEEVE POSITION

Rated speed rpm : 800

Rack travel in mm : 0.50  
Tolerance mm : +- 0.20

##### FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 700  
Aneroid pressure  
hPa : -

Del. quantity  
cm<sup>3</sup>/1000 strokes : 234.0

Tolerance  
cm<sup>3</sup>/1000 strokes : +- 1.0

Check tolerance  
cm<sup>3</sup>/1000S. : +- 4.0

Spread  
Tolerance  
cm<sup>3</sup>/1000 strokes : 5.0

Check tolerance  
cm<sup>3</sup>/1000S. : 9.0

##### CONTROL LEVER

control lever  
position degree : 78.0  
tolerance degree : +- 4.0

Rated speed rpm : 750  
rack travel mm : 14.15

Rated speed rpm : 779  
Tolerance 1/min : +- 4  
rack travel mm : 4.00

rack travel mm : 0.85  
Tolerance mm : +- 0.55

Rated speed rpm : 751  
rack travel mm : 14.15

Rated speed rpm : 780  
Tolerance 1/min : +- 4  
rack travel mm : 4.00

rack travel mm : 0.85  
Tolerance mm : +- 0.55

Rated speed rpm : 752  
rack travel mm : 14.15

Rated speed rpm : 781  
Tolerance 1/min : +- 4  
rack travel mm : 4.00

rack travel mm : 0.85  
Tolerance mm : +- 0.55

Rated speed rpm : 753  
rack travel mm : 14.15

Rated speed rpm : 782  
Tolerance 1/min : +- 4  
rack travel mm : 4.00

rack travel mm : 0.85  
Tolerance mm : +- 0.55

Rated speed rpm : 754  
rack travel mm : 14.15

Rated speed rpm : 783  
Tolerance 1/min : +- 4  
rack travel mm : 4.00

rack travel mm : 0.85  
Tolerance mm : +- 0.55

Rated speed rpm : 755  
rack travel mm : 14.15

Rated speed rpm : 784  
Tolerance 1/min :  $\pm$  4  
rack travel mm : 4.00

rack travel mm : 0.85  
Tolerance mm :  $\pm$  0.55

---

#### LOW IDLE

control lever  
position degree : 64.0  
tolerance degree :  $\pm$  4.0

#### Testing:

Rated speed rpm : 350  
rack travel mm : 5.30  
Tolerance mm :  $\pm$  0.10

rack travel mm : 2.00  
Rated speed rpm : 380  
Tolerance 1/min :  $\pm$  30

Rated speed rpm : 100

CRT mm min. :  $>$  15.00

#### SET IDLE AUXILIARY SPRING

rack travel mm : 2.00

---

#### TORQUE CONTROL

Rated speed rpm : 700  
rack travel mm : 15.15  
Tolerance mm :  $\pm$  0.05

Rated speed rpm : 600  
rack travel mm : 15.15  
Tolerance mm :  $\pm$  0.10

---

#### FUEL DELIVERY CHARACTERISTICS

Aneroid pressure  
hPa : -  
Rated speed rpm : 600  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 236.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  3.0

M08

Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  6.0  
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

---

#### STARTING FUEL DELIVERY

Rated speed rpm : 100  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 240.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  10.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  14.0

---

#### LOW IDLE

Rated speed rpm : 350  
rack travel mm : 5.30  
Tolerance mm :  $\pm$  0.30  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 19.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  3.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  6.0  
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

---

End of test specification sheet



# BOSCH INJ. PUMP TEST SPECIFICATIONS

## Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 07.07.93  
Test oil : ISO 4113  
Combination No. : 0 402 678 817  
Injection pump  
Pump designation : FE8P120A320LS7856  
EP type number : 0 412 628 867  
Governor  
Governor design. : RSV550...1050POA826  
Governor no. : 0 421 833 383  
Cust. part No. : 0230743202

Customer-spec. information  
Customer : MB-NFZ  
Motor : OM442LA  
Power kW : 320.0

## TEST BENCH REQUIREMENTS

Inlet line : 3.1  
Test oil inlet  
temp. °C : 40  
Tolerance °C : ± 2.0  
Overflow valve : 1 417 413 025  
Inlet press. bar : 1.5  
Tolerance bar : ± 0.1  
Overflow quantity  
min. l/h : 110  
Tolerance l/h : ± 10.0  
Test nozzle holder  
assembly : 1 688 901 105  
Opening pressure  
bar : 208.5  
Tolerance bar : ± 1.5

MD9

Test lines : 1 680 750 075  
Outside diameter : 8.0  
x inside diameter : 3.0  
x length mm : 1000

## REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

## BEGINNING OF DELIVERY

Test pressure bar : 26.0  
Tolerance bar : ± 1.0  
Prestroke mm : 5.25  
Tolerance mm : ± 0.05  
test only : ± 0.10  
Rack travel in mm : 20.50  
Tolerance mm : ± 0.50  
Firing order : 8- 7- 2- 6- 3  
                  : - 5- 4- 1  
Phasing : 0-45-90-135-180  
          : -225-270-315  
Tolerance : ± 0.30  
Check  
tolerance °NW : ± 0.50  
Start of delivery mark  
Barrel no. : 8

## BASIC SETTING

Rated speed rpm : 1080  
Rack travel in mm : 13.75  
Tolerance mm : ± 0.05  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 225.0

---

Tolerance  
cm<sup>3</sup>/1000 strokes : ± 1.0

---

Check tolerance  
cm<sup>3</sup>/1000S. : ± 4.0

---

Spread  
Tolerance  
cm<sup>3</sup>/1000 strokes : 5.0

---

Check tolerance  
cm<sup>3</sup>/1000S. : 9.0

Rated speed rpm : 550

Rack travel in mm : 4.10  
Tolerance mm : ± 0.30

Del. quantity  
cm<sup>3</sup>/1000 strokes : 19.0

Tolerance  
cm<sup>3</sup>/1000 strokes : ± 3.0

Check tolerance  
cm<sup>3</sup>/1000S. : ± 6.0

Spread  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0

Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

#### (B) SETTING OF INJECTION PUMP WITH GOVERNOR

---

##### GUIDE SLEEVE POSITION

Rated speed rpm : 800

Rack travel in mm : 0.50  
Tolerance mm : ± 0.20

governor spring  
pre-tension  
click setting x : 2.00

---

##### FULL LOAD DELIVERY AT FULL LOAD STOP

Aneroid pressure  
hPa : -  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 225.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 1.0  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 4.0  
Spread

Tolerance  
cm<sup>3</sup>/1000 strokes : 5.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 9.0

---

##### CONTROL LEVER

control lever  
position degree : 92.0  
tolerance degree : ± 4.0

---

##### LOW IDLE

control lever  
position degree : 72.0  
tolerance degree : ± 4.0

##### Testing:

Rated speed rpm : 550  
rack travel mm : 4.10  
Tolerance mm : ± 0.10

rack travel mm : 2.00  
Rated speed rpm : 570  
Tolerance 1/min : ± 30

Rated speed rpm : 100

CRT mm min. : > 19.50

##### SET IDLE AUXILIARY SPRING

rack travel mm : 2.00

---

##### TORQUE CONTROL

Rated speed rpm : 1080  
rack travel mm : 13.75  
Tolerance mm : ± 0.05

Rated speed rpm : 600  
rack travel mm : 14.00  
Tolerance mm : ± 0.10

Rated speed rpm : 940  
rack travel mm : 14.00  
Tolerance mm : ± 0.10

---

##### FUEL DELIVERY CHARACTERISTICS

Aneroid pressure  
hPa : -  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 242.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 2.0  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 5.0  
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

---

#### STARTING FUEL DELIVERY

Rated speed rpm : 100  
rack travel mm : 15.00  
Tolerance mm : ± 0.20  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 225.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 10.0  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 14.0

---

#### LOW IDLE

Rated speed rpm : 550  
rack travel mm : 4.10  
Tolerance mm : ± 0.30  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 19.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 3.0  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 6.0  
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

---

End of test specification sheet

# BOSCH INJ. PUMP TEST SPECIFICATIONS

## Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 13.10.95  
Test oil : ISO 4113

Combination No. : 0 402 736 890

Injection pump  
Pump designation : FES6P12DA12ORS7314  
EP type number : 0 412 726 901

Governor  
Governor design. : RQV400...1250PA964  
: -32K  
Governor no. : 0 421 815 486

Cust. part No. : 3282607

Customer-spec. information  
Customer : CUMMINS  
Motor : 6BTAA  
Power KW : 158.0

## TEST BENCH REQUIREMENTS

Inlet line : 3.2

Test oil inlet  
temp. °C : 40  
Tolerance °C : ± 2.0

Overflow valve : 2 417 413 086

Inlet press. bar : 2.0  
Tolerance bar : ± 0.1

Overflow quantity  
min. l/h : 140  
Tolerance l/h : ± 20.0

Test nozzle holde  
assembly : 1 688 901 101

Opening pressure  
bar : 208.5  
Tolerance bar : ± 1.5

M12

Test lines : 1 680 750 008

Outside diameter : 6.0

x inside diameter : 2.0  
x length mm : 600

## REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

## BEGINNING OF DELIVERY

Test pressure bar : 26.0  
Tolerance bar : ± 1.0

Prestroke mm : 3.70  
Tolerance mm : ± 0.05

test only : ± 0.10

Rack travel in mm : 12.50  
Tolerance mm : ± 0.50

Firing order : 1- 5- 3- 6- 2-  
: 4

Phasing : 0-60-120-180-240  
: -300

Tolerance : ± 0.30  
Check  
tolerance \*NW : ± 0.50

## Start of delivery blocking

\*NW after s.o.d. : 5.50  
Tolerance : ± 0.50

Check  
tolerance \*NW : ± 0.75

Barrel no. : 1

## BASIC SETTING

Rated speed rpm : 1250

Rack travel in mm : 14.60  
Tolerance mm :  $\pm$  0.05

Del. quantity  
cm<sup>3</sup>/1000 strokes : 155.0

Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  1.0

Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  4.0

Spread  
Tolerance  
cm<sup>3</sup>/1000 strokes : 5.0

Check tolerance  
cm<sup>3</sup>/1000S. : 9.0

Rated speed rpm : 400

Rack travel in mm : 6.50  
Tolerance mm :  $\pm$  0.30

Del. quantity  
cm<sup>3</sup>/1000 strokes : 20.0

Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  3.0

Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  5.0

Spread  
Tolerance  
cm<sup>3</sup>/1000 strokes : 7.0

Check tolerance  
cm<sup>3</sup>/1000S. : 11.0

#### (B) SETTING OF INJECTION PUMP WITH GOVERNOR

##### GUIDE SLEEVE TRAVEL

Rated speed rpm : 400  
guide sleeve  
travel mm : 1.39  
Tolerance mm :  $\pm$  0.20

Rated speed rpm : 1314  
guide sleeve  
travel mm : 7.65  
Tolerance mm :  $\pm$  0.15

Rated speed rpm : 864  
guide sleeve  
travel mm : 4.76  
Tolerance mm :  $\pm$  0.25

Rated speed rpm : 550

guide sleeve  
travel mm : 3.33  
Tolerance mm :  $\pm$  0.25

Rated speed rpm : 1700  
guide sleeve  
travel mm : 11.50  
Tolerance mm :  $\pm$  0.50

##### GUIDE SLEEVE POSITION

Rated speed rpm : 1430

Rack travel in mm : 13.60  
Tolerance mm :  $\pm$  1.30

##### FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1250  
Aneroid pressure  
hPa : 1500

Del. quantity  
cm<sup>3</sup>/1000 strokes : 155.0

Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  1.0

Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  4.0

Spread  
Tolerance  
cm<sup>3</sup>/1000 strokes : 5.0

Check tolerance  
cm<sup>3</sup>/1000S. : 9.0

##### CONTROL LEVER

control lever  
position degree : 62.0  
tolerance degree :  $\pm$  4.0

control lever  
position degree : 119.0  
tolerance degree :  $\pm$  4.0

##### RATED SPEED

rack travel mm : 13.60  
Rated speed rpm : 1295  
Tolerance 1/min :  $\pm$  5

rack travel mm : 4.00  
Rated speed rpm : 1480  
Tolerance 1/min :  $\pm$  15

rack travel mm : 0.50  
Tolerance mm :  $\pm$  0.50  
Rated speed rpm : 1550

---

## LOW IDLE

control lever  
position degree : 73.0  
tolerance degree :  $\pm$  4.0

control lever  
position degree : 16.0  
tolerance degree :  $\pm$  4.0

### Testing:

Rated speed rpm : 400  
rack travel mm : 6.50  
Tolerance mm :  $\pm$  0.10

Rated speed rpm : 300

CRT mm min. :  $>$  8.50

Rated speed rpm : 430

---

## TORQUE CONTROL

Rated speed rpm : 1250  
rack travel mm : 14.60  
Tolerance mm :  $\pm$  0.05

Rated speed rpm : 750  
rack travel mm : 13.00  
Tolerance mm :  $\pm$  0.10

Rated speed rpm : 400  
rack travel mm : 12.45  
Tolerance mm :  $\pm$  0.15

---

## ANEROID/ALTITUDE COMPENSATOR TEST

### SETTING

Rated speed rpm : 1250  
Pressure hPa : 1500  
rack travel mm : 14.60  
Tolerance mm :  $\pm$  0.05

### MEASUREMENT

Pressure hPa : -  
Rated speed rpm : 1250  
rack travel mm : 11.20  
Tolerance mm :  $\pm$  0.10

Rated speed rpm : 1250

Pressure hPa : 275  
rack travel mm : 11.80  
Tolerance mm :  $\pm$  0.20

Pressure hPa : 485  
rack travel mm : 13.80  
Tolerance mm :  $\pm$  0.05

---

## START CUT-OUT

Rated speed rpm :  $<$  340  
Check  
speed 1/min :  $<$  360

---

## FUEL DELIVERY CHARACTERISTICS

Aneroid pressure  
hPa : 1500  
Rated speed rpm : 750  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 136.0  
Tolerance

cm<sup>3</sup>/1000 strokes :  $\pm$  3.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  6.0

Speed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

Aneroid pressure  
hPa : -  
Rated speed rpm : 500  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 79.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  2.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  4.0

---

## BREAKAWAY

Rack travel in mm : 13.60  
Rated speed rpm : 1295  
Tolerance 1/min :  $\pm$  5

---

## STARTING FUEL DELIVERY

Rated speed rpm : 100  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 210.0

Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  15.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  19.0

---

#### LOW IDLE

Rated speed rpm : 400  
rack travel mm : 6.50  
Tolerance mm :  $\pm$  0.30  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 20.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  3.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  5.0  
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 7.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 11.0

---

End of test specification sheet

# BOSCH INJ. PUMP TEST SPECIFICATIONS

## Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 13.10.95  
Test oil : ISO 4113

Combination No. : 0 402 744 801

Injection pump  
Pump designation : FES4P120A320RS7380  
EP type number : 0 412 724 802

Governor  
Governor design. : RQV275...1200PA1232K  
Governor no. : 0 421 815 469

Cust. part No. : CCEP 5149A 66-237

## Customer-spec. information

Customer : RVI  
Motor : MIDR 04-02-26 B4  
Power KW : 110.0

## TEST BENCH REQUIREMENTS

Inlet line : 3.2

Test oil inlet  
temp. °C : 40  
Tolerance °C : ± 2.0

Overflow valve : 2 417 413 071

Inlet press. bar : 2.5

Overflow quantity  
min. l/h : 95  
Tolerance l/h : ± 10.0

Test nozzle holder  
assembly : 1 688 901 105

Opening pressure  
bar : 208.5  
Tolerance bar : ± 1.5

Test lines : 1 680 750 089

Outside diameter : 8.0

x inside diameter : 3.0  
x length mm : 600

## REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

## BEGINNING OF DELIVERY

Test pressure bar : 26.0  
Tolerance bar : ± 1.0

Prestroke mm : 5.00  
Tolerance mm : ± 0.05

test only : ± 0.10

Rack travel in mm : 11.00  
Tolerance mm : ± 0.50

Firing order : 1- 3- 4- 2

Phasing : 0-90-180-270  
Tolerance : ± 0.30  
Check  
tolerance °NW : ± 0.50

Start of delivery mark

Barrel no. : 1

## BASIC SETTING

Rated speed rpm : 1200

Del. quantity  
cm<sup>3</sup>/1000 strokes : 236.0

Tolerance  
cm<sup>3</sup>/1000 strokes : ± 1.0

Check tolerance  
cm<sup>3</sup>/1000S. : ± 4.0

Speed



Tolerance  
cm<sup>3</sup>/1000 strokes : 5.0

Check tolerance  
cm<sup>3</sup>/1000S. : 9.0

Rated speed rpm : 325

Rack travel in mm : -6.60

Tolerance mm :  $\pm$  0.20

Del. quantity  
cm<sup>3</sup>/1000 strokes : 40.0

Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  2.0

Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  6.0

Spread  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0

Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

#### (B) SETTING OF INJECTION PUMP WITH GOVERNOR

##### GUIDE SLEEVE TRAVEL

Rated speed rpm : 325  
guide sleeve  
travel mm : 1.52  
Tolerance mm :  $\pm$  0.20

Rated speed rpm : 1272  
guide sleeve  
travel mm : 9.31  
Tolerance mm :  $\pm$  0.15

Rated speed rpm : 894  
guide sleeve  
travel mm : 6.60  
Tolerance mm :  $\pm$  0.25

Rated speed rpm : 560  
guide sleeve  
travel mm : 4.01  
Tolerance mm :  $\pm$  0.25

Rated speed rpm : 1650  
guide sleeve  
travel mm : 13.50  
Tolerance mm :  $\pm$  0.50

##### GUIDE SLEEVE POSITION

Rated speed rpm : 1482

Rack travel in mm : 11.70

Tolerance mm :  $\pm$  1.30

##### FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1200

Aneroid pressure  
hPa : 1200

Del. quantity  
cm<sup>3</sup>/1000 strokes : 236.0

Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  1.0

Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  4.0

Spread  
Tolerance  
cm<sup>3</sup>/1000 strokes : 5.0

Check tolerance  
cm<sup>3</sup>/1000S. : 9.0

##### CONTROL LEVER

control lever  
position degree : 299.0  
tolerance degree :  $\pm$  4.0

##### RATED SPEED

rack travel mm : -1.00  
Rated speed rpm : 1260  
Tolerance 1/min :  $\pm$  5

rack travel mm : -8.70  
Rated speed rpm : 1385  
Tolerance 1/min :  $\pm$  15

rack travel mm : -12.20  
Tolerance mm :  $\pm$  0.50  
Rated speed rpm : 1500

##### LOW IDLE

control lever  
position degree : 253.0  
tolerance degree :  $\pm$  4.0

##### Testing:

Rated speed rpm : 325  
rack travel mm : -6.60  
Tolerance mm :  $\pm$  0.10

Rated speed rpm : 200

CRT mm min. :  $<$  -4.60

Rated speed rpm : 390

---

#### TORQUE CONTROL

Rated speed rpm : 1200

Rated speed rpm : 700  
rack travel mm : -1.15  
Tolerance mm :  $\pm$  0.10

Rated speed rpm : 350  
rack travel mm : -2.90  
Tolerance mm :  $\pm$  0.20

---

#### ANEROID/ALTITUDE COMPENSATOR TEST

#### SETTING

Rated speed rpm : 1200  
Pressure hPa : 1200

#### MEASUREMENT

Pressure hPa : -  
Rated speed rpm : 500  
rack travel mm : -4.20  
Tolerance mm :  $\pm$  0.20

Rated speed rpm : 1200

Pressure hPa : 320  
rack travel mm : -3.60  
Tolerance mm :  $\pm$  0.20

Pressure hPa : 520  
rack travel mm : -2.50  
Tolerance mm :  $\pm$  0.05

---

#### START CUT-OUT

Rated speed rpm : < 275  
Check  
speed 1/min : < 285

---

#### FUEL DELIVERY CHARACTERISTICS

Aneroid pressure  
hPa : 1200  
Rated speed rpm : 700  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 237.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  3.0

Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  6.0

Aneroid pressure  
hPa : -  
Rated speed rpm : 500  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 155.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  1.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  4.0

---

#### BREAKAWAY

Rack travel in mm : -1.00  
Rated speed rpm : 1260  
Tolerance 1/min :  $\pm$  5

---

#### STARTING FUEL DELIVERY

Rated speed rpm : 100  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 100.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  15.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  19.0

---

#### LOW IDLE

Rated speed rpm : 325  
rack travel mm : -6.60  
Tolerance mm :  $\pm$  0.20  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 40.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  2.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  6.0  
Speed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

---

End of test specification sheet

# BOSCH INJ. PUMP TEST SPECIFICATIONS

## Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 13.10.95  
Test oil : ISO 4113

Combination No. : 0 402 746 995

Injection pump  
Pump designation : FES6P120A320RS7343  
EP type number : 0 412 726 915

Governor  
Governor design. : RQV300...1000PA1160K  
Governor no. : 0 421 815 420

Cust. part No. : CCEP 5144A 66-232

Customer-spec. information  
Customer : RVI  
Motor : MIDR 062356 A/41  
Power kW : 280.0

## TEST BENCH REQUIREMENTS

Inlet line : 3.1

Test oil inlet  
temp. °C : 40  
Tolerance °C : ± 2.0

Overflow valve : 2 417 413 071

Inlet press. bar : 2.5

Test nozzle holde  
assembly : 1 688 901 105

Opening pressure  
bar : 208.5  
Tolerance bar : ± 1.5

Test lines : 1 680 750 089

Outside diameter : 3.0

x inside diameter : 3.0  
x length mm : 600

## REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

## BEGINNING OF DELIVERY

Test pressure bar : 26.0  
Tolerance bar : ± 1.0

Prestroke mm : 4.50  
Tolerance mm : ± 0.05

test only : ± 0.10

Rack travel in mm : 11.00  
Tolerance mm : ± 1.50

Firing order : 1- 5- 3- 6- 2-  
: 4

Phasing : 0-60-120-180-240  
: -300

Tolerance : ± 0.30  
Check  
tolerance °NW : ± 0.50

Start of delivery mark

Barrel no. : 1

## BASIC SETTING

Rated speed rpm : 1000

Del. quantity  
cm<sup>3</sup>/1000 strokes : 350.0

Tolerance  
cm<sup>3</sup>/1000 strokes : ± 1.0

Check tolerance  
cm<sup>3</sup>/1000S. : ± 4.0

Speed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 5.0

---

Check tolerance  
cm<sup>3</sup>/1000S. : 9.0

Del. quantity  
cm<sup>3</sup>/1000 strokes : 33.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 2.5  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 5.0  
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

(B) SETTING OF INJECTION PUMP  
WITH GOVERNOR

---

GUIDE SLEEVE TRAVEL

Rated speed rpm : 300  
guide sleeve  
travel mm : 1.32  
Tolerance mm : ± 0.25

Rated speed rpm : 1103  
guide sleeve  
travel mm : 8.70  
Tolerance mm : ± 0.25

Rated speed rpm : 823  
guide sleeve  
travel mm : 5.92  
Tolerance mm : ± 0.25

Rated speed rpm : 405  
guide sleeve  
travel mm : 2.43  
Tolerance mm : ± 0.25

Rated speed rpm : 455  
guide sleeve  
travel mm : 2.98  
Tolerance mm : ± 0.25

Rated speed rpm : 550  
guide sleeve  
travel mm : 3.66  
Tolerance mm : ± 0.25

Rated speed rpm : 1440  
guide sleeve  
travel mm : 13.50  
Tolerance mm : ± 0.50

---

GUIDE SLEEVE POSITION

Rated speed rpm : 1300  
Rack travel in mm : 11.60  
Tolerance mm : ± 1.30

---

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1000  
Aneroid pressure  
hPa : 1200  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 350.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 1.0  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 4.0  
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 5.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 9.0

---

CONTROL LEVER

control lever  
position degree : 117.0  
tolerance degree : ± 4.0

RATED SPEED

rack travel mm : -1.00  
Rated speed rpm : 1100  
Tolerance 1/min : ± 5

rack travel mm : -8.60  
Rated speed rpm : 1210  
Tolerance 1/min : ± 15

rack travel mm : -12.30  
Tolerance mm : ± 0.50  
Rated speed rpm : 1300

---

LOW IDLE

control lever  
position degree : 72.0  
tolerance degree : ± 4.0

Testing:

Rated speed rpm : 300  
rack travel mm : -7.80  
Tolerance mm : ± 0.20

Rated speed rpm : 200  
CRT mm max. : < -6.80  
Rated speed rpm : 390

---

#### TORQUE CONTROL

Rated speed rpm : 1000  
Rated speed rpm : 600  
rack travel mm : -0.45  
Tolerance mm :  $\pm$  0.15  
Rated speed rpm : 800  
rack travel mm : 0.10  
Tolerance mm :  $\pm$  0.15  
Rated speed rpm : 350  
rack travel mm : -1.70  
Tolerance mm :  $\pm$  0.30

---

#### ANEROID/ALTITUDE COMPENSATOR TEST

#### SETTING

Rated speed rpm : 1000  
Pressure hPa : 1200

#### MEASUREMENT

Pressure hPa : -  
Rated speed rpm : 1000  
rack travel mm : -3.90  
Tolerance mm :  $\pm$  0.30  
Rated speed rpm : 1000  
Pressure hPa : 320  
rack travel mm : -2.80  
Tolerance mm :  $\pm$  0.15  
Pressure hPa : 520  
rack travel mm : -1.70  
Tolerance mm :  $\pm$  0.05

---

#### START CUT-OUT

Rated speed rpm : < 225  
Check  
speed 1/min : < 245

---

#### FUEL DELIVERY CHARACTERISTICS

Aneroid pressure  
hPa : 1200  
Rated speed rpm : 600  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 381.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  3.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  6.0

Aneroid pressure  
hPa : -  
Rated speed rpm : 500  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 245.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  1.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  4.0

---

#### BREAKAWAY

Rack travel in mm : -1.00  
Rated speed rpm : 1100  
Tolerance 1/min :  $\pm$  5

---

#### STARTING FUEL DELIVERY

Rated speed rpm : 100  
rack travel mm : 20.25  
Tolerance mm :  $\pm$  0.75  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 185.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  15.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  19.0

---

#### LOW IDLE

Del. quantity  
cm<sup>3</sup>/1000 strokes : 33.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  2.5  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  5.0  
Speed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

---

End of test specification sheet

# BOSCH INJ. PUMP TEST SPECIFICATIONS

## Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 25.10.95  
Test oil : ISO 4113

Combination No. : 0 401 876 794

Injection pump  
Pump designation : FE6P120A320RS3206-3  
EP type number : 0 411 826 809

Governor  
Governor design. : RSV250...1100P1A560  
: -2  
Governor no. : 0 421 833 471

Cust. part No. : 865560-PO6 v. 12/94

Customer-spec. information  
Customer : PENTA  
Motor : TAD 730 P

## TEST BENCH REQUIREMENTS

Inlet line : 3.1

Test oil inlet  
temp. °C : 40  
Tolerance °C : ± 2.0

Overflow valve : 1 417 413 025

Inlet press. bar : 1.5

Test nozzle holder  
assembly : 1 688 901 019

Opening pressure  
bar : 208.5  
Tolerance bar : ± 1.5

Test lines : 1 680 750 075

Outside diameter : 8.0

x inside diameter : 2.5  
x length mm : 1000

## REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

## BEGINNING OF DELIVERY

Test pressure bar : 26.0  
Tolerance bar : ± 1.0

Prestroke mm : 3.65  
Tolerance mm : ± 0.05

test only : ± 0.10

Rack travel in mm : 10.50  
Tolerance mm : ± 1.50

Firing order : 1- 5- 3- 6- 2-  
: 4

Phasing : 0-60-120-180-240  
: -300

Tolerance : ± 0.30  
Check  
tolerance °NW : ± 0.75

Start of delivery mark

Barrel no. : 1

## BASIC SETTING

Rated speed rpm : 700

Rack travel in mm : 9.45  
Tolerance mm : ± 0.05

Del. quantity  
cm<sup>3</sup>/1000 strokes : 197.0

Tolerance  
cm<sup>3</sup>/1000 strokes : ± 1.0

Check tolerance  
cm<sup>3</sup>/1000S. : ± 4.0

|                                 |        |
|---------------------------------|--------|
| <hr/>                           |        |
| Speed                           |        |
| Tolerance                       |        |
| cm <sup>3</sup> /1000 strokes : | 5.0    |
| <hr/>                           |        |
| Check tolerance                 |        |
| cm <sup>3</sup> /1000S. :       | 9.0    |
| <hr/>                           |        |
| Rated speed rpm :               | 250    |
| <hr/>                           |        |
| Rack travel in mm :             | 5.20   |
| Tolerance mm :                  | + 0.20 |
| Del. quantity                   |        |
| cm <sup>3</sup> /1000 strokes : | 20.0   |
| Tolerance                       |        |
| cm <sup>3</sup> /1000 strokes : | + 3.0  |
| Check tolerance                 |        |
| cm <sup>3</sup> /1000S. :       | + 6.0  |
| <hr/>                           |        |
| Speed                           |        |
| Tolerance                       |        |
| cm <sup>3</sup> /1000 strokes : | 5.0    |
| Check tolerance                 |        |
| cm <sup>3</sup> /1000S. :       | 7.0    |

(B) SETTING OF INJECTION PUMP  
WITH GOVERNOR

---

GUIDE SLEEVE POSITION

|                   |      |
|-------------------|------|
| governor spring   |      |
| pre-tension       |      |
| click setting x : | 4.50 |

---

FULL LOAD DELIVERY AT FULL LOAD STOP

|                                 |       |
|---------------------------------|-------|
| Rated speed rpm :               | 700   |
| Aneroid pressure                |       |
| hPa :                           | -     |
| Del. quantity                   |       |
| cm <sup>3</sup> /1000 strokes : | 197.0 |
| Tolerance                       |       |
| cm <sup>3</sup> /1000 strokes : | + 1.0 |
| Check tolerance                 |       |
| cm <sup>3</sup> /1000S. :       | + 4.0 |
| <hr/>                           |       |
| Speed                           |       |
| Tolerance                       |       |
| cm <sup>3</sup> /1000 strokes : | 5.0   |
| Check tolerance                 |       |
| cm <sup>3</sup> /1000S. :       | 9.0   |

---

CONTROL LEVER

|                   |       |
|-------------------|-------|
| control lever     |       |
| position degree : | 119.0 |

M25

|                    |       |
|--------------------|-------|
| tolerance degree : | + 4.0 |
|--------------------|-------|

RATED SPEED

|                   |        |
|-------------------|--------|
| rack travel mm :  | 8.45   |
| Rated speed rpm : | 1145   |
| Tolerance 1/min : | + 5    |
| <hr/>             |        |
| rack travel mm :  | 4.00   |
| Rated speed rpm : | 1195   |
| Tolerance 1/min : | + 15   |
| <hr/>             |        |
| rack travel mm :  | 0.85   |
| Tolerance mm :    | + 0.55 |
| Rated speed rpm : | 1300   |

---

LOW IDLE

|                    |       |
|--------------------|-------|
| control lever      |       |
| position degree :  | 82.0  |
| tolerance degree : | + 4.0 |

Testing:

|                   |        |
|-------------------|--------|
| Rated speed rpm : | 250    |
| rack travel mm :  | 5.20   |
| Tolerance mm :    | + 0.10 |
| <hr/>             |        |
| rack travel mm :  | 2.00   |
| Rated speed rpm : | 330    |
| Tolerance 1/min : | + 30   |

---

TORQUE CONTROL

|                   |        |
|-------------------|--------|
| Rated speed rpm : | 700    |
| rack travel mm :  | 9.45   |
| Tolerance mm :    | + 0.05 |

---

BREAKAWAY

|                     |      |
|---------------------|------|
| Rack travel in mm : | 8.45 |
| Rated speed rpm :   | 1145 |
| Tolerance 1/min :   | + 5  |

---

LOW IDLE



Rated speed rpm : 250  
rack travel mm : 5.20  
Tolerance mm : +- 0.20  
Del. quantity  
cm3/1000 strokes : 20.0  
Tolerance  
cm3/1000 strokes : +- 3.0  
Check tolerance  
cm3/1000S. : +- 6.0  
Spreed  
Tolerance  
cm3/1000 strokes : 5.0  
Check tolerance  
cm3/1000S. : 7.0

---

End of test specification sheet

# BOSCH INJ. PUMP TEST SPECIFICATIONS

## Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 20.10.95  
Test oil : ISO 4113  
  
Combination No. : 0 402 046 864  
  
Injection pump  
Pump designation : PES6P120A320RS3337  
: -1  
EP type number : 0 412 026 772  
  
Governor  
Governor design. : RQV300...1250PA1149  
: -1K  
Governor no. : 0 421 815 421  
  
Cust. part No. : CCEP 5142A 66-219

## Customer-spec. information

Customer : RVI  
Motor : MIDR 06-02-26 W4  
Power KW : 155.0

## TEST BENCH REQUIREMENTS

Inlet line : 3.2  
  
Test oil inlet  
temp. °C : 40  
Tolerance °C : ± 2.0  
  
Overflow valve : 2 417 413 084  
  
Inlet press. bar : 2.5  
  
Test nozzle holde  
assembly : 1 688 901 105  
  
Opening pressure  
bar : 208.5  
Tolerance bar : ± 1.5  
  
Test Lines : 1 680 750 089

Outside diameter : 8.0  
x inside diameter : 3.0  
x length mm : 600

## REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

## BEGINNING OF DELIVERY

Test pressure bar : 26.0  
Tolerance bar : ± 1.0  
  
Prestroke mm : 4.15  
Tolerance mm : ± 0.05  
  
test only : ± 0.10  
  
Rack travel in mm : 13.00  
Tolerance mm : ± 1.50  
  
Firing order : 1- 5- 3- 6- 2-  
: 4  
  
Phasing : 0-60-120-180-240  
: -300  
Tolerance : ± 0.30  
Check  
tolerance °NW : ± 0.50  
  
Start of delivery mark  
  
°NW before FB : 0.40  
Barrel no. : 1

## BASIC SETTING

Rated speed rpm : 1250  
  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 202.5  
  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 1.0  
  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 4.0

---

Spread  
Tolerance  
cm<sup>3</sup>/1000 strokes : 5.0

---

Check tolerance  
cm<sup>3</sup>/1000S. : 9.0

Del. quantity  
cm<sup>3</sup>/1000 strokes : 27.5

Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  2.0

Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  5.0

Spread  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0

Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

#### (B) SETTING OF INJECTION PUMP WITH GOVERNOR

---

##### GUIDE SLEEVE TRAVEL

Rated speed rpm : 300  
guide sleeve  
travel mm : 1.31  
Tolerance mm :  $\pm$  0.20

Rated speed rpm : 1328  
guide sleeve  
travel mm : 9.98  
Tolerance mm :  $\pm$  0.15

Rated speed rpm : 876  
guide sleeve  
travel mm : 6.02  
Tolerance mm :  $\pm$  0.25

Rated speed rpm : 510  
guide sleeve  
travel mm : 3.59  
Tolerance mm :  $\pm$  0.25

Rated speed rpm : 1600  
guide sleeve  
travel mm : 13.50  
Tolerance mm :  $\pm$  0.50

---

##### GUIDE SLEEVE POSITION

Rated speed rpm : 1400

Rack travel in mm : 12.15  
Tolerance mm :  $\pm$  1.30

---

##### FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1250

Aneroid pressure  
hPa : 1000

Del. quantity  
cm<sup>3</sup>/1000 strokes : 202.5

Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  1.0

Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  4.0

Spread  
Tolerance  
cm<sup>3</sup>/1000 strokes : 5.0

Check tolerance  
cm<sup>3</sup>/1000S. : 9.0

---

##### CONTROL LEVER

control lever  
position degree : 294.0  
tolerance degree :  $\pm$  4.0

##### RATED SPEED

rack travel mm : -1.00  
Rated speed rpm : 1312  
Tolerance 1/min :  $\pm$  5

rack travel mm : -9.20  
Rated speed rpm : 1435  
Tolerance 1/min :  $\pm$  15

rack travel mm : -12.65  
Tolerance mm :  $\pm$  0.50  
Rated speed rpm : 1550

---

##### LOW IDLE

control lever  
position degree : 245.0  
tolerance degree :  $\pm$  4.0

##### Testing:

Rated speed rpm : 300  
rack travel mm : -6.40  
Tolerance mm :  $\pm$  0.20

Rated speed rpm : 200

CRT mm max. :  $<$  -5.60

Rated speed rpm : 400

---

#### TORQUE CONTROL

Rated speed rpm : 1250

Rated speed rpm : 850  
rack travel mm : -2.15  
Tolerance mm :  $\pm$  0.15

Rated speed rpm : 350  
rack travel mm : -2.20  
Tolerance mm :  $\pm$  0.30

---

#### ANEROID/ALTITUDE COMPENSATOR TEST

#### SETTING

Rated speed rpm : 1000  
Pressure hPa : 1000  
rack travel mm : -1.40

#### MEASUREMENT

Pressure hPa : -  
Rated speed rpm : 1000  
rack travel mm : -3.70  
Tolerance mm :  $\pm$  0.20

Rated speed rpm : 1000

Pressure hPa : 200  
rack travel mm : -2.90  
Tolerance mm :  $\pm$  0.10

Pressure hPa : 320  
rack travel mm : -1.80  
Tolerance mm :  $\pm$  0.05

---

#### START CUT-OUT

Rated speed rpm : < 225  
Check  
speed 1/min : < 245

---

#### FUEL DELIVERY CHARACTERISTICS

Aneroid pressure  
hPa : 1000  
Rated speed rpm : 850  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 141.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  3.0

Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  6.0

Aneroid pressure  
hPa : -  
Rated speed rpm : 1250  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 138.5  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  1.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  4.0

---

#### BREAKAWAY

Rack travel in mm : -1.00  
Rated speed rpm : 1312  
Tolerance 1/min :  $\pm$  5

---

#### STARTING FUEL DELIVERY

Rated speed rpm : 100  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 102.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  15.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  19.0

---

#### LOW IDLE

Del. quantity  
cm<sup>3</sup>/1000 strokes : 27.5  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  2.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  5.0  
Speed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

---

End of test specification sheet

# BOSCH INJ. PUMP TEST SPECIFICATIONS

## Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 19.10.95  
Test oil : ISO 4113

Combination No. : 0 402 046 874

Injection pump  
Pump designation : FES6P120A720RS3360  
EP type number : 0 412 026 785

Governor  
Governor design. : RQV300...1100PA1254K  
Governor no. : 0 421 815 485

Cust. part No. :

Customer-spec. information  
Customer : IVECO-UNIC  
Motor : 8360.46.4107  
Power kW : 198.0

## TEST BENCH REQUIREMENTS

Inlet line : 4.2

Test oil inlet  
temp. °C : 40  
Tolerance °C : ± 2.0

Overflow valve : 2 417 413 034

Inlet press. bar : 2.5

Overflow quantity  
min. l/h : 105  
Tolerance l/h : ± 10.0

Test nozzle holder  
assembly : 1 688 901 105

Opening pressure  
bar : 208.5  
Tolerance bar : ± 1.5

Test lines : 1 680 750 089

Outside diameter : 8.0

x inside diameter : 3.0  
x length mm : 600

## REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

## BEGINNING OF DELIVERY

Test pressure bar : 26.0  
Tolerance bar : ± 1.0

Prestroke mm : 4.15  
Tolerance mm : ± 0.05

test only : ± 0.10

Rack travel in mm : 13.50  
Tolerance mm : ± 0.50

Firing order : 1- 5- 3- 6- 2-  
: 4

Phasing : 0-60-120-180-240  
: -300

Tolerance : ± 0.30  
Check  
tolerance °NW : ± 0.50

## Start of delivery mark

Check  
tolerance °NW : ± 0.40

Barrel no. : 1

## BASIC SETTING

Rated speed rpm : 1100

Rack travel in mm : 13.45  
Tolerance mm :  $\pm$  0.05

Del. quantity  
cm<sup>3</sup>/1000 strokes : 174.0

Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  1.0

Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  4.0

Speed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 5.0

Check tolerance  
cm<sup>3</sup>/1000S. : 9.0

Rated speed rpm : 300

Rack travel in mm : 7.50  
Tolerance mm :  $\pm$  0.20

Del. quantity  
cm<sup>3</sup>/1000 strokes : 25.0

Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  3.0

Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  6.0

Speed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 2.0

Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

#### (B) SETTING OF INJECTION PUMP WITH GOVERNOR

##### GUIDE SLEEVE TRAVEL

Rated speed rpm : 325  
guide sleeve  
travel mm : 2.83  
Tolerance mm :  $\pm$  0.20

Rated speed rpm : 1185  
guide sleeve  
travel mm : 9.40  
Tolerance mm :  $\pm$  0.15

Rated speed rpm : 680  
guide sleeve  
travel mm : 4.45  
Tolerance mm :  $\pm$  0.25

Rated speed rpm : 300

guide sleeve  
travel mm : 2.79  
Tolerance mm :  $\pm$  0.25

Rated speed rpm : 1450  
guide sleeve  
travel mm : 13.50  
Tolerance mm :  $\pm$  0.50

##### GUIDE SLEEVE POSITION

Rated speed rpm : 1305

Rack travel in mm : 12.45  
Tolerance mm :  $\pm$  2.70

##### FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1100  
Aneroid pressure  
hPa : 1200

Del. quantity  
cm<sup>3</sup>/1000 strokes : 174.0

Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  1.0

Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  4.0

Speed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 5.0

Check tolerance  
cm<sup>3</sup>/1000S. : 9.0

##### CONTROL LEVER

control lever  
position degree : 117.0  
tolerance degree :  $\pm$  4.0

##### RATED SPEED

rack travel mm : 12.40  
Rated speed rpm : 1145  
Tolerance 1/min :  $\pm$  5

rack travel mm : 4.00  
Rated speed rpm : 1260  
Tolerance 1/min :  $\pm$  15

rack travel mm : 0.50  
Tolerance mm :  $\pm$  0.50  
Rated speed rpm : 1400

##### LOW IDLE

control lever  
position degree : 79.0  
tolerance degree :  $\pm$  4.0

#### Testing:

Rated speed rpm : 300  
rack travel mm : 6.40  
Tolerance mm :  $\pm$  0.10

Rated speed rpm : 225

CRT mm min. :  $>$  7.90

Rated speed rpm : 330

---

#### TORQUE CONTROL

Rated speed rpm : 1100  
rack travel mm : 13.45  
Tolerance mm :  $\pm$  0.05

Rated speed rpm : 750  
rack travel mm : 13.60  
Tolerance mm :  $\pm$  0.15

Rated speed rpm : 500  
rack travel mm : 12.80  
Tolerance mm :  $\pm$  0.15

Rated speed rpm : 300  
rack travel mm : 12.60  
Tolerance mm :  $\pm$  0.20

---

#### ANEROID/ALTITUDE COMPENSATOR TEST

##### SETTING

Rated speed rpm : 1100  
Pressure hPa : 1200  
rack travel mm : 13.45  
Tolerance mm :  $\pm$  0.05

##### MEASUREMENT

Pressure hPa : -  
Rated speed rpm : 1100  
rack travel mm : 10.50  
Tolerance mm :  $\pm$  0.10

Rated speed rpm : 1100

Pressure hPa : 640  
rack travel mm : 12.75

Tolerance mm :  $\pm$  0.05

Pressure hPa : 340  
rack travel mm : 11.30  
Tolerance mm :  $\pm$  0.20

---

#### START CUT-OUT

Rated speed rpm :  $<$  235  
Check  
speed 1/min :  $<$  245

---

#### FUEL DELIVERY CHARACTERISTICS

Aneroid pressure  
hPa : 1200  
Rated speed rpm : 750  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 190.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  3.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  6.0

Aneroid pressure  
hPa : 1200  
Rated speed rpm : 500  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 154.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  3.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  6.0

Aneroid pressure  
hPa : -  
Rated speed rpm : 500  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 82.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  1.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  4.0

---

#### BREAKAWAY

Rack travel in mm : 12.40  
Rated speed rpm : 1145  
Tolerance 1/min :  $\pm$  5

---

#### STARTING FUEL DELIVERY

Rated speed rpm : 100  
rack travel mm : 12.20

Tolerance mm :  $\pm$  0.20  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 85.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  15.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  19.0

---

LOW IDLE

Rated speed rpm : 300  
rack travel mm : 7.50  
Tolerance mm :  $\pm$  0.20  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 25.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  3.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  6.0  
Speed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

---

End of test specification sheet



# BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 23.10.95  
Test oil : ISO 4113  
Combination No. : 0 402 066 708  
Injection pump  
Pump designation : PES6P120A120RS3358  
EP type number : 0 412 026 784  
Governor  
Governor design. : RSV475...1150P2A619  
Governor no. : 0 421 833 522

Cust. part No. : 3283019

Customer-spec. information  
Customer : CDC  
Motor : 6BTA-590 ELITE  
Power KW : 136.0

## TEST BENCH REQUIREMENTS

Inlet Line : 3.2  
Test oil inlet  
temp. °C : 40  
Tolerance °C : ± 2.0  
Overflow valve : 2 417 413 086  
Inlet press. bar : 1.5  
Test nozzle holde  
assembly : 1 688 901 103  
Opening pressure  
bar : 208.5  
Tolerance bar : ± 1.5  
Test lines : 1 680 750 089  
Outside diameter : 8.0

x inside diameter : 3.0  
x length mm : 600

## REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

## BEGINNING OF DELIVERY

Test pressure bar : 26.0  
Tolerance bar : ± 1.0  
Prestroke mm : 2.85  
Tolerance mm : ± 0.05  
test only : ± 0.10  
Rack travel in mm : 10.50  
Tolerance mm : ± 1.50  
Firing order : 1- 5- 3- 6- 2-  
: 4

Phasing : 0-60-120-180-240  
: -300  
Tolerance : ± 0.30  
Check  
tolerance °NW : ± 0.50

## Start of delivery blocking

°NW after s.o.d. : 6.75  
Tolerance : ± 0.50  
Check  
tolerance °NW : ± 0.75  
Barrel no. : 1

## BASIC SETTING

Rated speed rpm : 1150  
Rack travel in mm : 10.80  
Tolerance mm : ± 0.05

Tolerance  
cm<sup>3</sup>/1000 strokes : + 1.0

Check tolerance  
cm<sup>3</sup>/1000S. : + 3.0

Spread  
Tolerance  
cm<sup>3</sup>/1000 strokes : 4.0

Check tolerance  
cm<sup>3</sup>/1000S. : 7.5

Rated speed rpm : 475

Rack travel in mm : 5.60  
Tolerance mm : + 0.30

Del. quantity  
cm<sup>3</sup>/1000 strokes : 21.0

Tolerance  
cm<sup>3</sup>/1000 strokes : + 2.0

Check tolerance  
cm<sup>3</sup>/1000S. : + 4.5

Spread  
Tolerance  
cm<sup>3</sup>/1000 strokes : 6.0

Check tolerance  
cm<sup>3</sup>/1000S. : 9.0

#### (B) SETTING OF INJECTION PUMP WITH GOVERNOR

#### GUIDE SLEEVE POSITION

governor spring  
pre-tension  
click setting x : 4.75

#### FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1150

Aneroid pressure  
hPa : 1500

Tolerance  
cm<sup>3</sup>/1000 strokes : + 1.0

Check tolerance  
cm<sup>3</sup>/1000S. : + 3.0

Spread  
Tolerance  
cm<sup>3</sup>/1000 strokes : 4.0

Check tolerance  
cm<sup>3</sup>/1000S. : 7.5

#### CONTROL LEVER

NO7

control lever  
position degree : 105.0  
tolerance degree : + 4.0

#### RATED SPEED

rack travel mm : 9.80  
Rated speed rpm : 1195  
Tolerance 1/min : + 5

rack travel mm : 4.00  
Rated speed rpm : 1290  
Tolerance 1/min : + 15

rack travel mm : 0.85  
Tolerance mm : + 0.55  
Rated speed rpm : 1400

#### LOW IDLE

control lever  
position degree : 87.0  
tolerance degree : + 4.0

#### Testing:

Rated speed rpm : 475  
rack travel mm : 5.60  
Tolerance mm : + 0.10

rack travel mm : 2.00  
Rated speed rpm : 570  
Tolerance 1/min : + 30

#### TORQUE CONTROL

Rated speed rpm : 1150  
rack travel mm : 10.80  
Tolerance mm : + 0.05

Rated speed rpm : 750  
rack travel mm : 10.80  
Tolerance mm : + 0.10

#### ANEROID/ALTITUDE COMPENSATOR TEST

#### SETTING

Rated speed rpm : 500  
Pressure hPa : 1500  
rack travel mm : 10.80  
Tolerance mm : + 0.05

#### MEASUREMENT

Pressure hPa : -  
Rated speed rpm : 500  
rack travel mm : 8.60  
Tolerance mm :  $\pm$  0.20

Rated speed rpm : 500

Pressure hPa : 900  
rack travel mm : 10.20  
Tolerance mm :  $\pm$  0.20

Pressure hPa : 600  
rack travel mm : 9.15  
Tolerance mm :  $\pm$  0.05

#### FUEL DELIVERY CHARACTERISTICS

Aneroid pressure  
hPa : 1500  
Rated speed rpm : 750  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 151.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  2.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  4.0  
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

Aneroid pressure  
hPa : -  
Rated speed rpm : 500  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 110.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  2.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  4.0

#### BREAKAWAY

Rack travel in mm : 9.80  
Rated speed rpm : 1195  
Tolerance 1/min :  $\pm$  5

#### STARTING FUEL DELIVERY

Rated speed rpm : 100

N08

rack travel mm : 20.25  
Tolerance mm :  $\pm$  0.75  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 100.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  20.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  25.0

#### LOW IDLE

Rated speed rpm : 475  
rack travel mm : 5.60  
Tolerance mm :  $\pm$  0.30  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 21.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  2.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  4.5  
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 6.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 9.0

End of test specification sheet

# BOSCH INJ. PUMP TEST SPECIFICATIONS

## Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 20.10.95  
Test oil : ISO 4113  
  
Combination No. : 0 402 646 623  
  
Injection pump  
Pump designation : FE6P120A320RS7288  
: -10  
EP type number : 0 412 626 918  
  
Governor  
Governor design. : RQV250...900PA1069  
: -1  
Governor no. : 0 421 814 070  
  
Cust. part No. : 866141 P04 v. 10/94

Customer-spec. information  
Customer : PENTA  
Motor : TAD 1030P

## TEST BENCH REQUIREMENTS

Inlet line : 3.1  
  
Vibration  
damper  
(RoBo diaphragm) : 4.2  
  
Test oil inlet  
temp. °C : 40  
Tolerance °C : ± 2.0  
  
Overflow valve : 1 457 413 010  
  
Inlet press. bar : 2.5  
Tolerance bar : ± 0.1  
  
Test nozzle holder  
assembly : 1 688 901 105  
  
Opening pressure  
bar : 208.5  
Tolerance bar : ± 1.5

N09

Test lines : 1 680 750 015  
  
Outside diameter : 6.0  
  
x inside diameter : 3.0  
x length mm : 600

## REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

## BEGINNING OF DELIVERY

Test pressure bar : 26.0  
Tolerance bar : ± 1.0  
  
Prestroke mm : 3.45  
Tolerance mm : ± 0.05  
  
test only : ± 0.10  
  
Rack travel in mm : 10.50  
Tolerance mm : ± 1.50  
  
Firing order : 1- 5- 3- 6- 2-  
: 4  
  
Phasing : 0-60-120-180-240  
: -300  
Tolerance : ± 0.30  
Check  
tolerance °NW : ± 0.75  
  
Start of delivery mark  
  
Barrel no. : 1

## BASIC SETTING

Rated speed rpm : 700  
  
Rack travel in mm : 13.45  
Tolerance mm : ± 0.05  
  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 290.0

---

Tolerance  
cm<sup>3</sup>/1000 strokes : + 1.0

---

Check tolerance  
cm<sup>3</sup>/1000S. : + 4.0

---

Speed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 6.0

---

Check tolerance  
cm<sup>3</sup>/1000S. : 10.0

(B) SETTING OF INJECTION PUMP  
WITH GOVERNOR

---

GUIDE SLEEVE TRAVEL

Rated speed rpm : 250  
guide sleeve  
travel mm : 1.12  
Tolerance mm : + 0.25

Rated speed rpm : 949  
guide sleeve  
travel mm : 7.39  
Tolerance mm : + 0.25

Rated speed rpm : 657  
guide sleeve  
travel mm : 5.07  
Tolerance mm : + 0.25

Rated speed rpm : 315  
guide sleeve  
travel mm : 1.98  
Tolerance mm : + 0.25

Rated speed rpm : 365  
guide sleeve  
travel mm : 2.63  
Tolerance mm : + 0.25

Rated speed rpm : 420  
guide sleeve  
travel mm : 3.17  
Tolerance mm : + 0.25

Rated speed rpm : 1290  
guide sleeve  
travel mm : 11.50  
Tolerance mm : + 0.50

---

GUIDE SLEEVE POSITION

Rated speed rpm : 1150

Rack travel in mm : 9.00  
Tolerance mm : + 3.00

---

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 700  
Aneroid pressure  
hPa : 1500  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 290.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : + 1.0  
Check tolerance  
cm<sup>3</sup>/1000S. : + 4.0  
Speed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 6.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 10.0

---

CONTROL LEVER

control lever  
position degree : 119.0  
tolerance degree : + 4.0

RATED SPEED

rack travel mm : 12.45  
Rated speed rpm : 935  
Tolerance 1/min : + 5

rack travel mm : 4.00  
Rated speed rpm : 1075  
Tolerance 1/min : + 15

rack travel mm : 0.50  
Tolerance mm : + 0.50  
Rated speed rpm : 1150

---

LOW IDLE

control lever  
position degree : 80.0  
tolerance degree : + 4.0

Testing:

Rated speed rpm : 250  
rack travel mm : 7.70  
Tolerance mm : + 0.30

Rated speed rpm : 150

CRT mm min. : > 9.00

Rated speed rpm : 350

---

ANEROID/ALTITUDE  
COMPENSATOR TEST

SETTING

Rated speed rpm : 500  
Pressure hPa : 1500  
rack travel mm : 13.45  
Tolerance mm :  $\pm$  0.05

MEASUREMENT

Pressure hPa : -  
Rated speed rpm : 500  
rack travel mm : 10.00  
Tolerance mm :  $\pm$  0.10

Rated speed rpm : 500

Pressure hPa : 200  
rack travel mm : 10.30  
Tolerance mm :  $\pm$  0.10

Pressure hPa : 1090  
rack travel mm : 13.15  
Tolerance mm :  $\pm$  0.05

---

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure  
hPa : -  
Rated speed rpm : 700  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 176.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  1.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  4.0

---

BREAKAWAY

Rack travel in mm : 12.45  
Rated speed rpm : 935  
Tolerance 1/min :  $\pm$  5

---

End of test specification sheet

# BOSCH INJ. PUMP TEST SPECIFICATIONS

## Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 19.10.95  
Test oil : ISO 4113

Combination No. : 0 402 736 892

Injection pump  
Pump designation : PES6P120A120RS7400  
EP type number : 0 412 726 950

Governor  
Governor design. : RQV350...1100PA1244  
: -1K  
Governor no. : 0 421 815 488

Cust. part No. : 3282610

Customer-spec. information  
Customer : CUMMINS  
Motor : 6CTAA  
Power kW : 221.0

## TEST BENCH REQUIREMENTS

Inlet line : 3.2

Test oil inlet  
temp. °C : 40  
Tolerance °C : ± 2.0

Overflow valve : 2 417 413 086

Inlet press. bar : 1.5

Tolerance L/h : ± 20.0

Test nozzle holder  
assembly : 1 688 901 101

Opening pressure  
bar : 208.5  
Tolerance bar : ± 1.5

Test lines : 1 680 750 008

Outside diameter : 6.0

x inside diameter : 2.0

x length mm : 600

## REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

## BEGINNING OF DELIVERY

Test pressure bar : 26.0  
Tolerance bar : ± 1.0

Prestroke mm : 3.30  
Tolerance mm : ± 0.05

test only : ± 0.10

Rack travel in mm : 20.50  
Tolerance mm : ± 0.50

Firing order : 1- 5- 3- 6- 2-  
: 4

Phasing : 0-60-120-180-240  
: -300  
Tolerance : ± 0.30  
Check  
tolerance °NW : ± 0.50

## Start of delivery blocking

\*NW after s.o.d. : 11.00  
Tolerance : ± 0.50  
Check  
tolerance °NW : ± 0.75

Barrel no. : 1

## BASIC SETTING

Rated speed rpm : 1100

Rack travel in mm : 14.60  
Tolerance mm : ± 0.05

Del. quantity  
cm<sup>3</sup>/1000 strokes : 209.0

Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  1.0

Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  4.0

Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 5.0

Check tolerance  
cm<sup>3</sup>/1000S. : 9.0

Rated speed rpm : 350

Rack travel in mm : 4.80  
Tolerance mm :  $\pm$  0.30

Del. quantity  
cm<sup>3</sup>/1000 strokes : 25.0

Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  3.0

Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  5.0

Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 7.0

Check tolerance  
cm<sup>3</sup>/1000S. : 11.0

#### (B) SETTING OF INJECTION PUMP WITH GOVERNOR

##### GUIDE SLEEVE TRAVEL

Rated speed rpm : 350  
guide sleeve  
travel mm : 1.93  
Tolerance mm :  $\pm$  0.20

Rated speed rpm : 1159  
guide sleeve  
travel mm : 10.28  
Tolerance mm :  $\pm$  0.15

Rated speed rpm : 710  
guide sleeve  
travel mm : 5.80  
Tolerance mm :  $\pm$  0.25

Rated speed rpm : 430  
guide sleeve  
travel mm : 4.33  
Tolerance mm :  $\pm$  0.25

Rated speed rpm : 1380

guide sleeve  
travel mm : 13.50  
Tolerance mm :  $\pm$  0.50

##### GUIDE SLEEVE POSITION

Rated speed rpm : 1220

Rack travel in mm : 13.60  
Tolerance mm :  $\pm$  1.30

##### FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1100  
Aneroid pressure  
hPa : 1500

Del. quantity  
cm<sup>3</sup>/1000 strokes : 209.0

Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  1.0

Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  4.0

Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 5.0

Check tolerance  
cm<sup>3</sup>/1000S. : 9.0

##### CONTROL LEVER

control lever  
position degree : 66.0  
tolerance degree :  $\pm$  4.0

control lever  
position degree : 120.0  
tolerance degree :  $\pm$  4.0

##### RATED SPEED

rack travel mm : 13.60  
Rated speed rpm : 1145  
Tolerance 1/min :  $\pm$  5

rack travel mm : 4.00  
Rated speed rpm : 1245  
Tolerance 1/min :  $\pm$  15

rack travel mm : 0.50  
Tolerance mm :  $\pm$  0.50  
Rated speed rpm : 1350

##### LOW IDLE



control lever  
position degree : 73.0  
tolerance degree :  $\pm$  4.0

control lever  
position degree : 20.0  
tolerance degree :  $\pm$  4.0

#### Testing:

Rated speed rpm : 350  
rack travel mm : 4.80  
Tolerance mm :  $\pm$  0.10

Rated speed rpm : 250

CRT mm min. :  $>$  8.10

Rated speed rpm : 350

---

#### TORQUE CONTROL

Rated speed rpm : 1100  
rack travel mm : 14.60  
Tolerance mm :  $\pm$  0.05

Rated speed rpm : 750  
rack travel mm : 14.05  
Tolerance mm :  $\pm$  0.10

Rated speed rpm : 900  
rack travel mm : 14.35  
Tolerance mm :  $\pm$  0.15

Rated speed rpm : 600  
rack travel mm : 13.95  
Tolerance mm :  $\pm$  0.15

---

#### ANEROID/ALTITUDE COMPENSATOR TEST

#### SETTING

Rated speed rpm : 1100  
Pressure hPa : 1500  
rack travel mm : 14.60  
Tolerance mm :  $\pm$  0.05

#### MEASUREMENT

Pressure hPa : -  
Rated speed rpm : 1100  
rack travel mm : 10.45  
Tolerance mm :  $\pm$  0.20

Rated speed rpm : 1100

Pressure hPa : 880  
rack travel mm : 13.20  
Tolerance mm :  $\pm$  0.20

Pressure hPa : 240  
rack travel mm : 11.20  
Tolerance mm :  $\pm$  0.05

---

#### START CUT-OUT

Rated speed rpm :  $<$  280  
Check  
speed 1/min :  $<$  300

---

#### FUEL DELIVERY CHARACTERISTICS

Aneroid pressure  
hPa : 1500  
Rated speed rpm : 750  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 198.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  3.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  6.0  
Speed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

Aneroid pressure  
hPa : -  
Rated speed rpm : 500  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 111.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  2.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  4.0

---

#### BREAKAWAY

Rack travel in mm : 13.60  
Rated speed rpm : 1145  
Tolerance 1/min :  $\pm$  5

---

#### STARTING FUEL DELIVERY

Rated speed rpm : 100  
rack travel mm : 12.00  
Tolerance mm :  $\pm$  0.50

Del. quantity  
cm<sup>3</sup>/1000 strokes : 255.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  20.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  24.0

---

LOW IDLE

Rated speed rpm : 350  
rack travel mm : 4.80  
Tolerance mm :  $\pm$  0.30  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 25.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  3.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  5.0  
Speed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 7.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 11.0

---

End of test specification sheet

# BOSCH INJ. PUMP TEST SPECIFICATIONS

## Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 23.10.95  
Test oil : ISO 4113

Combination No. : 0 402 736 893

Injection pump  
Pump designation : PES6P120A120RS7400  
EP type number : 0 412 726 950

Governor  
Governor design. : RQV350...1100PA1244  
: -2K  
Governor no. : 0 421 815 489

Cust. part No. : 3282609

Customer-spec. information  
Customer : CUMMINS  
Motor : 6CTAA  
Power kW : 206.0

## TEST BENCH REQUIREMENTS

Inlet line : 3.2

Test oil inlet  
temp. °C : 40  
Tolerance °C : ± 2.0

Overflow valve : 2 417 413 086

Inlet press. bar : 1.5  
Tolerance l/h : ± 20.0

Test nozzle holder  
assembly : 1 688 901 101

Opening pressure  
bar : 208.5  
Tolerance bar : ± 1.5

Test lines : 1 680 750 008

Outside diameter : 6.0  
x inside diameter : 2.0  
x length mm : 600

## REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

## BEGINNING OF DELIVERY

Test pressure bar : 26.0  
Tolerance bar : ± 1.0

Prestroke mm : 3.30  
Tolerance mm : ± 0.05

test only : ± 0.10

Rack travel in mm : 20.50  
Tolerance mm : ± 0.50

Firing order : 1- 5- 3- 6- 2-  
: 4

Phasing : 0-60-120-180-240  
: -300

Tolerance : ± 0.30  
Check  
tolerance °NW : ± 0.50

## Start of delivery blocking

\*NW after s.o.d. : 11.00  
Tolerance : ± 0.50

Check  
tolerance °NW : ± 0.75

Barrel no. : 1

## BASIC SETTING

Rated speed rpm : 1050

Rack travel in mm : 14.40  
Tolerance mm : ± 0.05

Del. quantity  
cm<sup>3</sup>/1000 strokes : 211.0

Tolerance  
cm<sup>3</sup>/1000 strokes : ± 1.0

Check tolerance  
cm<sup>3</sup>/1000S. : ± 4.0

Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 5.0

Check tolerance  
cm<sup>3</sup>/1000S. : 9.0

Rated speed rpm : 350

Rack travel in mm : 4.80  
Tolerance mm : ± 0.30

Del. quantity  
cm<sup>3</sup>/1000 strokes : 25.0

Tolerance  
cm<sup>3</sup>/1000 strokes : ± 3.0

Check tolerance  
cm<sup>3</sup>/1000S. : ± 5.0

Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 7.0

Check tolerance  
cm<sup>3</sup>/1000S. : 11.0

#### (B) SETTING OF INJECTION PUMP WITH GOVERNOR

##### GUIDE SLEEVE TRAVEL

Rated speed rpm : 350  
guide sleeve  
travel mm : 1.93  
Tolerance mm : ± 0.20

Rated speed rpm : 1159  
guide sleeve  
travel mm : 10.28  
Tolerance mm : ± 0.15

Rated speed rpm : 710  
guide sleeve  
travel mm : 5.79  
Tolerance mm : ± 0.25

Rated speed rpm : 430  
guide sleeve  
travel mm : 4.33  
Tolerance mm : ± 0.25

Rated speed rpm : 1380

guide sleeve  
travel mm : 13.50  
Tolerance mm : ± 0.50

##### GUIDE SLEEVE POSITION

Rated speed rpm : 1215

Rack travel in mm : 13.30  
Tolerance mm : ± 1.30

##### FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1050  
Aneroid pressure  
hPa : 1500

Del. quantity  
cm<sup>3</sup>/1000 strokes : 211.0

Tolerance  
cm<sup>3</sup>/1000 strokes : ± 1.0

Check tolerance  
cm<sup>3</sup>/1000S. : ± 4.0

Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 5.0

Check tolerance  
cm<sup>3</sup>/1000S. : 9.0

##### CONTROL LEVER

control lever  
position degree : 66.0  
tolerance degree : ± 4.0

control lever  
position degree : 120.0  
tolerance degree : ± 4.0

##### RATED SPEED

rack travel mm : 13.40  
Rated speed rpm : 1145  
Tolerance 1/min : ± 5

rack travel mm : 4.00  
Rated speed rpm : 1245  
Tolerance 1/min : ± 15

rack travel mm : 0.50  
Tolerance mm : ± 0.50  
Rated speed rpm : 1350

##### LOW IDLE

control lever  
position degree : 74.0  
tolerance degree :  $\pm$  4.0

control lever  
position degree : 20.0  
tolerance degree :  $\pm$  4.0

#### Testing:

Rated speed rpm : 350  
rack travel mm : 4.80  
Tolerance mm :  $\pm$  0.10

Rated speed rpm : 250

CRT mm min. :  $>$  8.20

Rated speed rpm : 350

---

#### TORQUE CONTROL

Rated speed rpm : 1050  
rack travel mm : 14.40  
Tolerance mm :  $\pm$  0.05

Rated speed rpm : 650  
rack travel mm : 13.90  
Tolerance mm :  $\pm$  0.10

Rated speed rpm : 900  
rack travel mm : 14.30  
Tolerance mm :  $\pm$  0.15

---

#### ANEROID/ALTITUDE COMPENSATOR TEST

#### SETTING

Rated speed rpm : 1050  
Pressure hPa : 1500  
rack travel mm : 14.40  
Tolerance mm :  $\pm$  0.05

#### MEASUREMENT

Pressure hPa : -  
Rated speed rpm : 1050  
rack travel mm : 10.40  
Tolerance mm :  $\pm$  0.20

Rated speed rpm : 1050

Pressure hPa : 880  
rack travel mm : 13.20  
Tolerance mm :  $\pm$  0.20

Pressure hPa : 240  
rack travel mm : 11.20  
Tolerance mm :  $\pm$  0.05

---

#### START CUT-OUT

Rated speed rpm :  $<$  280  
Check  
speed 1/min :  $<$  300

---

#### FUEL DELIVERY CHARACTERISTICS

Aneroid pressure  
hPa : 1500  
Rated speed rpm : 650  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 197.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  3.0  
Check tolerance  
cm<sup>3</sup>/1000s. :  $\pm$  6.0  
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0  
Check tolerance  
cm<sup>3</sup>/1000s. : 12.0

Aneroid pressure  
hPa : -  
Rated speed rpm : 500  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 111.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  2.0  
Check tolerance  
cm<sup>3</sup>/1000s. :  $\pm$  4.0

---

#### BREAKAWAY

Rack travel in mm : 13.40  
Rated speed rpm : 1145  
Tolerance 1/min :  $\pm$  5

---

#### STARTING FUEL DELIVERY

Rated speed rpm : 100  
rack travel mm : 12.80  
Tolerance mm :  $\pm$  0.50  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 255.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  20.0

Check tolerance  
cm<sup>3</sup>/1000S. : ± 24.0

---

LOW IDLE

Rated speed rpm : 350  
rack travel mm : 4.80  
Tolerance mm : ± 0.30  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 25.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 3.0  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 5.0  
Speed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 7.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 11.0

---

End of test specification sheet

# BOSCH INJ. PUMP TEST SPECIFICATIONS

## Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 23.10.95  
Test oil : ISO 4113  
Combination No. : 0 402 736 894  
Injection pump  
Pump designation : PES6P120A120RS7400  
EP type number : 0 412 726 950  
Governor  
Governor design. : RQV350...1200PA1261  
Governor no. : 0 421 815 495

Cust. part No. : 3282766

Customer-spec. information  
Customer : CUMMINS  
Motor : 6CTAA  
Power KW : 191.0

## TEST BENCH REQUIREMENTS

Inlet line : 3.2  
Test oil inlet  
temp. °C : 40  
Tolerance °C : ± 2.0  
Overflow valve : 2 417 413 086  
Inlet press. bar : 1.5  
Tolerance l/h : ± 20.0  
Test nozzle holder  
assembly : 1 688 901 101  
Opening pressure  
bar : 208.5  
Tolerance bar : ± 1.5  
Test lines : 1 680 750 008

Outside diameter : 6.0  
x inside diameter : 2.0  
x length mm : 600

## REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

## BEGINNING OF DELIVERY

Test pressure bar : 26.0  
Tolerance bar : ± 1.0  
Prestroke mm : 3.30  
Tolerance mm : ± 0.05  
test only : ± 0.10  
Rack travel in mm : 20.50  
Tolerance mm : ± 0.50  
Firing order : 1- 5- 3- 6- 2-  
: 4  
Phasing : 0-60-120-180-240  
: -300  
Tolerance : ± 0.30  
Check  
tolerance °NW : ± 0.50  
Start of delivery blocking  
°NW after s.o.d. : 11.00  
Tolerance : ± 0.50  
Check  
tolerance °NW : ± 0.75  
Barrel no. : 1

## BASIC SETTING

Rated speed rpm : 1150  
Rack travel in mm : 13.60  
Tolerance mm : ± 0.05

Del. quantity  
cm<sup>3</sup>/1000 strokes : 190.0

Tolerance  
cm<sup>3</sup>/1000 strokes : +- 1.0

Check tolerance  
cm<sup>3</sup>/1000S. : +- 4.0

Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 5.0

Check tolerance  
cm<sup>3</sup>/1000S. : 9.0

Rated speed rpm : 350

Rack travel in mm : 4.80  
Tolerance mm : +- 0.30

Del. quantity  
cm<sup>3</sup>/1000 strokes : 25.0

Tolerance  
cm<sup>3</sup>/1000 strokes : +- 3.0

Check tolerance  
cm<sup>3</sup>/1000S. : +- 5.0

Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 7.0

Check tolerance  
cm<sup>3</sup>/1000S. : 11.0

#### (B) SETTING OF INJECTION PUMP WITH GOVERNOR

##### GUIDE SLEEVE TRAVEL

Rated speed rpm : 350  
guide sleeve  
travel mm : 1.93  
Tolerance mm : +- 0.20

Rated speed rpm : 1258  
guide sleeve  
travel mm : 10.14  
Tolerance mm : +- 0.15

Rated speed rpm : 766  
guide sleeve  
travel mm : 5.91  
Tolerance mm : +- 0.25

Rated speed rpm : 450  
guide sleeve  
travel mm : 4.49  
Tolerance mm : +- 0.25

Rated speed rpm : 1520

guide sleeve  
travel mm : 13.50  
Tolerance mm : +- 0.50

##### GUIDE SLEEVE POSITION

Rated speed rpm : 1350

Rack travel in mm : 12.60  
Tolerance mm : +- 1.30

##### FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1150  
Aneroid pressure  
hPa : 1500

Del. quantity  
cm<sup>3</sup>/1000 strokes : 190.0

Tolerance  
cm<sup>3</sup>/1000 strokes : +- 1.0

Check tolerance  
cm<sup>3</sup>/1000S. : +- 4.0

Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 5.0

Check tolerance  
cm<sup>3</sup>/1000S. : 9.0

##### CONTROL LEVER

control lever  
position degree : 65.0  
tolerance degree : +- 4.0

control lever  
position degree : 119.0  
tolerance degree : +- 4.0

##### RATED SPEED

rack travel mm : 12.60  
Rated speed rpm : 1245  
Tolerance 1/min : +- 5

rack travel mm : 4.00  
Rated speed rpm : 1355  
Tolerance 1/min : +- 15

rack travel mm : 0.50  
Tolerance mm : +- 0.50  
Rated speed rpm : 1450

##### LOW IDLE



control lever  
position degree : 76.0  
tolerance degree :  $\pm$  4.0

control lever  
position degree : 22.0  
tolerance degree :  $\pm$  4.0

#### Testing:

Rated speed rpm : 350  
rack travel mm : 4.80  
Tolerance mm :  $\pm$  0.10

Rated speed rpm : 250  
CRT mm min. :  $>$  9.20

Rated speed rpm : 350

---

#### TORQUE CONTROL

Rated speed rpm : 1150  
rack travel mm : 13.60  
Tolerance mm :  $\pm$  0.05

Rated speed rpm : 600  
rack travel mm : 13.10  
Tolerance mm :  $\pm$  0.10

Rated speed rpm : 750  
rack travel mm : 13.70  
Tolerance mm :  $\pm$  0.15

---

#### ANEROID/ALTITUDE COMPENSATOR TEST

#### SETTING

Rated speed rpm : 1150  
Pressure hPa : 1500  
rack travel mm : 13.60  
Tolerance mm :  $\pm$  0.05

#### MEASUREMENT

Pressure hPa : -  
Rated speed rpm : 1150  
rack travel mm : 10.40  
Tolerance mm :  $\pm$  0.20

Rated speed rpm : 1150

Pressure hPa : 880  
rack travel mm : 13.20  
Tolerance mm :  $\pm$  0.20

Pressure hPa : 240  
rack travel mm : 11.20  
Tolerance mm :  $\pm$  0.05

---

#### START CUT-OUT

Rated speed rpm :  $<$  280  
Check  
speed 1/min :  $<$  300

---

#### FUEL DELIVERY CHARACTERISTICS

Aneroid pressure  
hPa : 1500  
Rated speed rpm : 600  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 176.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  3.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  6.0  
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

Aneroid pressure  
hPa : -  
Rated speed rpm : 500  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 111.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  2.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  4.0

---

#### BREAKAWAY

Rack travel in mm : 12.60  
Rated speed rpm : 1245  
Tolerance 1/min :  $\pm$  5

---

#### STARTING FUEL DELIVERY

Rated speed rpm : 100  
rack travel mm : 12.10  
Tolerance mm :  $\pm$  0.50  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 255.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  20.0

Check tolerance  
cm<sup>3</sup>/1000S. : +- 24.0

---

LOW IDLE

Rated speed rpm : 350  
rack travel mm : 4.80  
Tolerance mm : +- 0.30  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 25.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : +- 3.0  
Check tolerance  
cm<sup>3</sup>/1000S. : +- 5.0  
Speed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 7.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 11.0

---

End of test specification sheet

# BOSCH INJ. PUMP TEST SPECIFICATIONS

## Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 20.10.95  
Test oil : ISO 4113

Combination No. : 0 403 466 156

Injection pump  
Pump designation : PES6MW100/120RS1238  
EP type number : 0 413 406 237

Governor  
Governor design. : RSV450...1100MW2A374  
Governor no. : 0 420 085 257

Cust. part No. : 3926881

Customer-spec. information  
Customer : CDC  
Motor : 6 CT-83D  
Power KW : 160.0

## TEST BENCH REQUIREMENTS

Test oil inlet  
temp. °C : 40  
Tolerance °C : ± 2.0

Overflow valve : 1 417 413 047

Inlet press. bar : 1.5

Test nozzle holde  
assembly : 1 688 901 101

Opening pressure  
bar : 208.5  
Tolerance bar : ± 1.5

Test lines : 1 680 750 014

Outside diameter : 6.0

x inside diameter : 2.0  
x length mm : 600

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## REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

## BEGINNING OF DELIVERY

Test pressure bar : 31.0  
Tolerance bar : ± 1.0

Prestroke mm : 2.80  
Tolerance mm : ± 0.05

test only : ± 0.10

Rack travel in mm : 10.50  
Tolerance mm : ± 1.50

Firing order : 1- 5- 3- 6- 2-  
: 4

Phasing : 0-60-120-180-240  
: -300

Tolerance : ± 0.50

Check  
tolerance °NW : ± 0.75

Start of delivery blocking

°NW after s.o.d. : 8.00

Barrel no. : 1

## BASIC SETTING

Rated speed rpm : 1100

Rack travel in mm : 11.90  
Tolerance mm : ± 0.05

Del. quantity  
cm<sup>3</sup>/1000 strokes : 143.0

Tolerance  
cm<sup>3</sup>/1000 strokes : ± 1.0

Check tolerance  
cm<sup>3</sup>/1000S. : ± 4.0

|                     |         |      |
|---------------------|---------|------|
| Spreed              |         |      |
| Tolerance           |         |      |
| cm3/1000 strokes :  | 4.0     |      |
| Check tolerance     |         |      |
| cm3/1000S. :        | 7.5     |      |
| Rated speed rpm :   |         | 450  |
| Rack travel in mm : |         | 5.30 |
| Tolerance mm :      | +- 0.30 |      |
| Del. quantity       |         |      |
| cm3/1000 strokes :  | 12.0    |      |
| Tolerance           |         |      |
| cm3/1000 strokes :  | +- 2.0  |      |
| Check tolerance     |         |      |
| cm3/1000S. :        | +- 4.5  |      |
| Spreed              |         |      |
| Tolerance           |         |      |
| cm3/1000 strokes :  | 3.5     |      |
| Check tolerance     |         |      |
| cm3/1000S. :        | 5.5     |      |

(B) SETTING OF INJECTION PUMP  
WITH GOVERNOR

GUIDE SLEEVE POSITION

|                     |         |
|---------------------|---------|
| Rated speed rpm :   | 800     |
| Rack travel in mm : | 0.65    |
| Tolerance mm :      | +- 0.35 |
| governor spring     |         |
| pre-tension         |         |
| click setting x :   | 4.75    |

FULL LOAD DELIVERY AT FULL LOAD STOP

|                    |        |
|--------------------|--------|
| Rated speed rpm :  | 1100   |
| Aneroid pressure   |        |
| hPa :              | 1100   |
| Del. quantity      |        |
| cm3/1000 strokes : | 143.0  |
| Tolerance          |        |
| cm3/1000 strokes : | +- 1.0 |
| Check tolerance    |        |
| cm3/1000S. :       | +- 4.0 |
| Spreed             |        |
| Tolerance          |        |
| cm3/1000 strokes : | 4.0    |
| Check tolerance    |        |
| cm3/1000S. :       | 7.5    |

CONTROL LEVER

|                    |        |
|--------------------|--------|
| control lever      |        |
| position degree :  | 104.0  |
| tolerance degree : | +- 4.0 |

RATED SPEED

|                   |         |      |
|-------------------|---------|------|
| rack travel mm :  | 10.90   |      |
| Rated speed rpm : | 1150    |      |
| Tolerance 1/min : | +- 5    |      |
| rack travel mm :  |         | 4.00 |
| Rated speed rpm : | 1270    |      |
| Tolerance 1/min : | +- 15   |      |
| rack travel mm :  |         | 0.85 |
| Tolerance mm :    | +- 0.55 |      |
| Rated speed rpm : | 1400    |      |
| rack travel mm :  |         | 4.00 |
| Rated speed rpm : | 1225    |      |

LOW IDLE

|                    |        |
|--------------------|--------|
| control lever      |        |
| position degree :  | 82.0   |
| tolerance degree : | +- 4.0 |

Testing:

|                   |         |         |
|-------------------|---------|---------|
| Rated speed rpm : | 450     |         |
| rack travel mm :  | 5.30    |         |
| Tolerance mm :    | +- 0.10 |         |
| Rated speed rpm : |         | 100     |
| CRT mm min. :     |         | > 19.50 |

TORQUE CONTROL

|                   |         |     |
|-------------------|---------|-----|
| Rated speed rpm : | 1100    |     |
| rack travel mm :  | 11.90   |     |
| Tolerance mm :    | +- 0.05 |     |
| Rated speed rpm : |         | 750 |
| rack travel mm :  | 12.40   |     |
| Tolerance mm :    | +- 0.10 |     |

ANEROID/ALTITUDE  
COMPENSATOR TEST

## SETTING

Rated speed rpm : 500  
Pressure hPa : 1100  
rack travel mm : 12.45  
Tolerance mm :  $\pm$  0.05

## MEASUREMENT

Pressure hPa : -  
Rated speed rpm : 500  
rack travel mm : 10.50  
Tolerance mm :  $\pm$  0.05

Rated speed rpm : 500

Pressure hPa : 850  
rack travel mm : 12.00  
Tolerance mm :  $\pm$  0.20

Pressure hPa : 625  
rack travel mm : 11.00  
Tolerance mm :  $\pm$  0.10

## FUEL DELIVERY CHARACTERISTICS

Aneroid pressure  
hPa : 1100  
Rated speed rpm : 750  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 154.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  2.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  5.0  
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 6.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 9.0

Aneroid pressure  
hPa : -  
Rated speed rpm : 500  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 115.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  1.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  4.0

## BREAKAWAY

Rack travel in mm : 10.90  
Rated speed rpm : 1150  
Tolerance 1/min :  $\pm$  5

## STARTING FUEL DELIVERY

Rated speed rpm : 100  
rack travel mm : 20.00  
Tolerance mm :  $\pm$  1.00  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 170.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  10.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  13.0

## LOW IDLE

Rated speed rpm : 450  
rack travel mm : 5.30  
Tolerance mm :  $\pm$  0.30  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 12.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  2.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  4.5  
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 3.5  
Check tolerance  
cm<sup>3</sup>/1000S. : 5.5

End of test specification sheet